

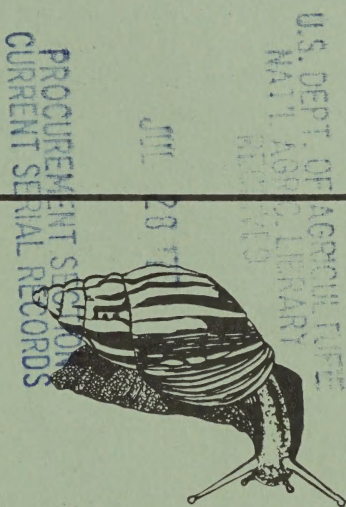
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Cooperative PLANT PEST REPORT



Animal
and Plant
Health
Inspection
Service

U.S.
DEPARTMENT
OF AGRICULTURE

This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

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COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM damage to corn heavy in New Mexico, Oklahoma, and Florida. (p. 381).

POTATO LEAFHOPPER damage in Illinois, Ohio, and Michigan. (p. 382).

EUROPEAN CORN BORER leaf damage 50 percent or more on corn in Missouri and Illinois. (pp. 382-383).

CORN ROOTWORM pupae and/or adults in Nebraska, Missouri, Iowa, and Indiana. (pp. 383-384).

GRASS BUG damage in parts of Utah worst in several years. (p. 385).

BLUE ALFALFA APHID and/or PEA APHID stunted alfalfa in Nevada and Colorado. (pp. 385-386). Pea aphid population explosion underway on peas in Wisconsin. (p. 388).

SPRUCE BUDWORM outbreak in northern New Hampshire most severe on record. (p. 390).

JAPANESE BEETLE heavy in Georgia, South Carolina, and Delaware. Increasing in Maryland. (pp. 393-394).

Detection

A SOFT SCALE is a new State record in Alabama. (p. 391).

For new county and island records see page 388.

Special Reports

EUROPEAN CORN BORER fall 1975 populations increased in all 12 North Central States reporting. (pp. 397-404).

Reports in this issue are for the week ending July 2, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ARMYWORM (*Pseudaletia unipuncta*) - MICHIGAN - Feeding on wheat, rye, oats, tilled corn, alfalfa, vetch, soybeans, snap beans, clover, grasses, and sugar beets up to week of June 25. (Hammon, Ruppel). Reported for first time this year in Montcalm, Ionia, Washtenaw, and Osceola Counties (Crosby et al.) and in large numbers in field in Tuscola County (Sweigard). NEW YORK - Damage heavy on corn in Sullivan County; all no-till corn had to be treated. (Skoda, June 25). Many problems on corn and wheat in Niagara County. (Herendeen, June 28). NEW HAMPSHIRE - Stripping sweet corn leaves and destroying tassels in many areas. (Bowman). MAINE - Adults, up to 50 per night per trap, in central and south areas week of June 21. Larvae possibly migrating in from grass borders. (Gall).

CORN EARWORM (*Heliothis zea*) - NEW MEXICO - Flagged 80 percent of whorls at Artesia, Eddy County. Some flagging in Dona Ana County. Light on some treated tomatoes and chili in Dona Ana County. (NM Coop. Rpt.). OKLAHOMA - Damaged 90 percent of ears in field of early planted Muskogee County sweet corn week ending June 25. (OK Coop. Sur.). FLORIDA - Larvae continued heavy on field corn in Jackson County June 21-25. Currently damaged 50 percent of ears on 10 acres of untreated sweet corn on farm southwest of Gainesville, Alachua County. (FL Coop. Sur.). VIRGINIA - Heavier in whorls of corn than in past few years. Noted on tassels and silks. (Allen). MASSACHUSETTS - Adult in blacklight trap at Wareham, Plymouth County, June 23. (Tomlinson).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW MEXICO - Controls continue on sorghum in Dona Ana, Eddy, Chaves, Luna, and Hidalgo Counties. Some fields reddened as counts reached 30 colonies per leaf. (NM Coop. Rpt.). OKLAHOMA - Moderate to heavy on early planted sorghum in scattered fields in north-central, northeast, west-central, central, east-central, southwest, and south-central areas week ending June 25. (OK Coop. Sur.). INDIANA - Light in corn whorls in Tippecanoe County. Large colonies on occasional plants in sorghum field in Vigo County. (Shade, Meyer).

GREENBUG (*Schizaphis graminum*) - OKLAHOMA - Very light on sorghum in panhandle week ending June 25. Counts per plant by county: Major heavy and scattered, Ellis 0-40 in one field of 14-inch sorghum, Payne averaged 40 in one field of 12-inch plants, Mayes and Craig heavy, Caddo and Washita up to 500 in scattered fields, Blaine 0-80 on early planted sorghum, Dewey 0-25 on early planted sorghum and 0-11 on 2-inch sorghum, Kingfisher 0-2 and 0-85, Creek and Wagoner light, Muskogee still moderate to heavy, Kiowa 100-700 on 24-inch plants in one field and 0-5 on 2 to 3-inch plants, Comanche 0-2 in 2 forage sorghum fields, and Stephens and Garvin 0-35. (OK Coop. Sur.). NEBRASKA - Counts per sorghum plant by area: Southeast, east, central, and south districts still relatively light; Saunders County averaged 3 per plant at Mead; Hall, York, and Merrick Counties 0-30 on 10 to 18-inch plants with little population difference on resistant and susceptible varieties. (Mayo et al.). SOUTH DAKOTA - Persisted throughout milo areas. Damaged some fields. Up to 600 per small seedling. (Walgenbach).

POTATO LEAFHOPPER (Empoasca fabae) - MISSOURI - Counts by area: South-central 16-70 per 100 sweeps of alfalfa and southwest up to one per 3-inch soybean plant. (Munson). KENTUCKY - Averages per sweep in Warren County by stage of alfalfa: First-cutting 12-inch regrowth 0.44, second cutting in bloom 1.88, second-cutting 5-inch regrowth 0.18. (Christensen). ILLINOIS - Increasing rapidly, more than one per sweep in many alfalfa fields. Adults 4 and nymphs 1-2 per sweep with "hopperburn" in Hancock County field. (IL Ins. Rpt.). INDIANA - Adults reaching economic counts on alfalfa statewide except in fields ready for harvest. Nymphs still very few. (Edwards, Meyer).

OHIO - Potato leafhopper adults heavy, 40-388 per 100 sweeps, on alfalfa in west-central counties. Yellowing of leaf tips in several fields. Many fields of second growth sprayed. First nymphs June 29 in Auglaize County. (Lewis). MICHIGAN - Statewide week of June 25. Some yellowing of potatoes in Allegan County. (Hammon). WISCONSIN - Nymphs and adults 10-60 per 100 sweeps of alfalfa in south-central and southwest counties and not more than 7 per 50 sweeps of potatoes and snap beans in Central Sands area. (WI Pest Sur.). MINNESOTA - Adult (and nymphal) averages per 100 sweeps of alfalfa by county: Carver 40, McLeod trace (10), Meeker 20 (20), Redwood 20, Stearns 5, Watonwan 10 (40), and Wright 10. (MN Pest Rpt.).

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - Two of 193 Bladen County tobacco fields at threshold week ending June 25. Heaviest infestation 13 percent; most frequent, 5 percent. Controls good. (Kirby, Reagan).

TOBACCO HORNWORM (Manduca sexta) - NORTH CAROLINA - One of 193 Bladen County tobacco fields at threshold week ending June 25. Heaviest infestation 13 percent; most frequent, 3 percent. One of 172 Lenoir County fields at threshold. (Kirby et al.). Currently, 2 of 283 tobacco fields in Lenoir County reached threshold. Heaviest count of 5 large nonparasitized larvae per 50 plants. (Harper, Reagan).

CORN, SORGHUM, SUGARCANE

DISEASES

HOLCUS SPOT (Pseudomonas syringae) - NEBRASKA - Several corn samples received with moderate to heavy infection. Heaviest in areas where weather wet and windy. (Riesselman).

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEBRASKA - Larvae active in east half of State. Status on corn by county: Wayne and Stanton infestations averaged 4 percent in 21 fields; Cedar, Knox, Pierce, and Wayne damaged 8.3 percent in 31 fields, very few unhatched egg masses; Antelope, Pierce, Wheeler, Stanton, and Holt infestations averaged 35 percent in 108 fields; and Merrick damaged 46 percent of plants with 60-inch extended leaf height in one field, infestations averaged 35 percent in 5 and ranged 0-10 percent in 15 popcorn fields with 40 to 50-inch extended leaf height. (Raun). MINNESOTA - Infested average of less than one percent of corn in Blue Earth, Brown, Meeker, Redwood, Waseca, Watonwan, and Wright Counties. Some 0.5-inch larvae feeding in

whorls. (MN Pest Rpt.). WISCONSIN - First-generation larvae light in corn. Hatch about over in south, west, and central counties. Still laying eggs in east and north counties. Infested up to 16 percent of plants, average of 8 percent in more mature fields. (WI Pest Sur.). MICHIGAN - Second-instar larvae in whorls of sweet corn in southwest area June 22. (Cress).

MISSOURI - European corn borer larvae 0-110 per 100 corn plants. Percent leaf feeding by area: South-central 0-63, central 0-46, and north-central 0-92. (Munson). ILLINOIS - Damage in corn still light. Fresh whorl feeding 50 percent or more in occasional fields. First adult flight about over. Extended leaf height of 50-60 inches in north area. (IL Ins. Rpt.). INDIANA - Average percent of corn feeding (with larval averages per stalk) by district: West-central 3.5 (0.75), central 2.1 (0.36), east-central 7 (1.26). Most corn in tassel-in-whorl stage. Larvae mostly in whorl or in midrib; only one larva inside stalk. (Meyer). OHIO - First-brood larvae light on corn. "Shothole" damage to upper and whorl leaves on 0-15 percent of plants statewide. Adults decreased in blacklight traps at Wooster, Wayne County. (Lewis).

MARYLAND - European corn borer light on corn statewide. Larval injury on plants averaged less than 5 percent. Infestation 30 percent (various instars) in isolated moisture-stressed fields in Cecil County. Second-brood flights underway in lower Eastern Shore counties. (U. Md., Ent. Dept.). NEW JERSEY - Rapid decrease statewide on sweet corn indicates end of first-generation activity. Only few egg masses statewide. (Ins.-Dis. Newsltr.). NEW HAMPSHIRE - Leaf feeding damage on whorl-stage sweet corn. (Bowman). MAINE - Increase slow in blacklight traps week of June 21. Eggs on bottom of corn leaves in York County. (Gall).

BLACK CUTWORM (*Agrotis ipsilon*) - IOWA - Last-instar larvae damaged field corn in several fields in Clinton County. (IA Ins. Sur.). NEW YORK - Stand losses often 50 percent in corn in Clinton (Thomas, June 23) and St. Lawrence Counties (Berndt, June 28). MAINE - Still problem on corn in central area. (Gall).

FALL ARMYWORM (*Spodoptera frugiperda*) - FLORIDA - Damaged some late-planted field corn in Jackson County June 21-25. Currently, continued heavy on field corn at Hastings, St. Johns County; larvae mostly in buds but beginning to appear in ears. From 200 per night June 30, males decreased to 150 on July 2 in pheromone trap. (FL Coop. Sur.). MISSISSIPPI - Infested 30-acre corn field in Jefferson Davis County. Second and third instars averaged 1.5 per stalk. (Anderson).

CORN ROOTWORMS (*Diabrotica* spp.) - NEBRASKA - Larval activity of WESTERN CORN ROOTWORM (*D. virgifera*) and NORTHERN CORN ROOTWORM (*D. longicornis*) very light in 46 treated corn fields at Mead, Saunders County. Ranged 90-200 per plant in trap crop area with goosenecking and lodging. Up to 3 full nodes eaten from roots of these plants. Most larvae in second and third instar, some pupae present. (Mayo). Larvae 0-12 (averaged less than one) per plant in 108 fields in Antelope, Pierce, Wheeler, Stanton, and Holt Counties. Second and third instars predominant with some prepupae. (Koinzan). Pupation underway in York, Hall, Merrick, and Fillmore Counties. (Raun). First *D. virgifera* adult in corn plot at Lincoln, Lancaster County, June 26. (Miller). MISSOURI - Adults of

Diabrotica virgifera and D. longicornis in all corn areas. Adults averaged 3.5 per plant on 4-foot corn in northeast area. Larvae averaged 4.8 and 7.7 per 10 feet of row in central area. Larval damage in northeast and northwest areas. (Munson). IOWA - D. longicornis damaged 9 fields of corn in Ida County where rootworm treatments applied at planting. Late instars 7-12 per plant. First pupa in Ida County. (IA Ins. Sur.). MINNESOTA - Third larval instars of Diabrotica spp. averaged 15 per untreated corn plant in Redwood and Waseca Counties. (MN Pest Rpt.). ILLINOIS - Damage by D. longicornis and D. virgifera increased and more widespread. Larvae 10-15 per plant in occasional corn field. (IL Ins. Rpt.). INDIANA - Diabrotica spp. prepupae and pupae on corn in west-central and central districts. Some goosenecking in central district. (Anderson et al.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - NORTH CAROLINA - Larvae increased in 4 of 10 Coastal Plain soybean fields. Foliar loss 5-25 percent in infested fields. Larvae and adults 15+ per 6-foot sample. (Hunt).

CHINCH BUG (Blissus leucopterus leucopterus) - NEBRASKA - Still problem throughout southeast third of State on sorghum and corn planted into former wheat field. (Rosell, Miller).

YELLOW SUGARCANE APHID (Sipha flava) - OKLAHOMA - Counts on sorghum by county week ending June 25: Craig heavy; Mayes moderate; Wagoner light; Dewey, Kiowa, Comanche, Stephens, Garvin, and Caddo very light. (OK Coop. Sur.).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - NORTH CAROLINA - Damaged corn in Robeson, Chowan, and Edgecombe Counties. Severe to midstalks and webbing apparent to tassels in 2 Edgecombe County fields of 0.25-1.0 acre each. Spread into field from border rows. Associated with light soils. Symptoms similar to drought stress without blade curl. (Warren, Vaughn).

BANKS GRASS MITE (Oligonychus pratensis) - NEW MEXICO - Up to 3-5 colonies per leaf on corn at Portales, Roosevelt County. Damaged leaves evident. (NM Coop. Rpt.).

SMALL GRAINS

DISEASES

OAT LOOSE SMUT (Ustilago avenae) - MINNESOTA - Heaviest loss, averaged 20 percent, in Froker oats in Waseca, Blue Earth, Watonwan, and Brown Counties. (MN Pest Rpt.).

WHEAT ROOT AND CROWN ROT (Helminthosporium sativum) - MICHIGAN - On wheat leaves in Washtenaw County week of June 25. (Smith).

TAKE-ALL (Gaumannomyces graminis) - NEW YORK - Severe week of June 28 in Madison County wheat field. Large areas showed dwarfed plants, many with sooty, prematurely bleached heads. Stem bases black. (NY Wkly. Rpt.).

INSECTS

BARLEY THRIPS (Limothrips denticornis) - NORTH DAKOTA - Adults averaged 1,000 per 100 sweeps in Golden Valley County barley. Adults up to 4 per leaf sheath and barley head. (Scholl).

TURF, PASTURES, RANGELAND

INSECTS

GRASS BUGS - UTAH - Labops hesperius damaged planted wheatgrasses and native grasses in Wales Canyon between Ephraim and Nephi in Sanpete and Juab Counties on 11,000+ acres, worst damage in several years. Labops, still in nymphal stages June 23, damaged range grasses on Cedar Mountain, Iron County. Labops conspicuously damaged roadside planted grasses along State Highway 14, south of Panguitch near Cedar City. Labops easily found in all sites checked along East Fork of Sevier River in Garfield County. L. hesperius heavy in Salina Canyon, Sevier County. Spray program planned on Cedar Mountain, Iron County. Irbisia pacifica counts and damage heavy on grasses in Beaver Dam, Box Elder County, and some areas about Logan, Cache County. (Haws).

A HESPERIID SKIPPER (Thymelicus lineola) - MICHIGAN - First adults week of June 14 in Chippewa County. (Hutchinson). Nuisance numbers in Osceola County. (Krich). Larvae heavy, up to 400 per 20 sweeps, on hay grasses in east Chippewa County. Damage severe in Kalkaska County, first report of damage in this county. (Poppy).

WESTERN TENT CATERPILLAR (Malacosoma californicum) - NEVADA - Larvae 5-10 (averaged 7) per bitterbrush stem on 1,280 acres of rangeland in O'Neil Basin, Elko County. (Peters).

A SCARAB (Ataenius spretulus) - OHIO - Pupae in samples from golf courses as of June 23 in Cincinnati area, Hamilton and Clermont Counties; pupation 40 percent by June 28. Heaviest infestation in untreated turf was 240 per square foot. Bacterial milky disease present in 3-5 percent of larvae. (Wegner).

BLUEGRASS BILLBUG (Sphenophorus parvulus) - NEBRASKA - Larvae 18-37 (averaged 24.6) per square foot of sod at Douglas County commercial sod farm. (Koinzan).

FORAGE LEGUMES

INSECTS

ALFALFA WEEVIL (Hypera postica) - MONTANA - Larvae light to moderate in some areas. Counts per sweep by county: Judith Basin 0.5, Ravalli 6-10, Fergus and Fallon much heavier with extensive damage to alfalfa. (Bain, Jensen). NEVADA - Larvae 2-20 (averaged 12) per sweep of hay alfalfa in Diamond Valley, Eureka County. (Peters). OKLAHOMA - Larvae averaged 88 per 10 sweeps in Garvin County alfalfa field and 10 per 10 sweeps in Comanche County field. (OK Coop. Sur.). IOWA - Adults severely damaged 6-inch regrowth of alfalfa in 3 Crawford County fields. (IA Ins. Sur.).

BLUE ALFALFA APHID (Acyrtosiphon kondoi) - UTAH - Infested alfalfa at Milford, Beaver County. Collected by D.W. Davis, June 23, 1976. Determined by G. Knowlton. This is a new county record. (Davis, Knowlton). NEVADA - This species (90-100 percent of population) and PEA APHID (A. pisum) averaged 750-1,000 per sweep of hay alfalfa in Mason and Smith Valleys, Lyon County. Severely stunted, yellowed, and deformed fields that were recently cut or where regrowth 8 inches or less. Populations (A. kondoi 25 percent) averaged 350 per sweep of hay and seed alfalfa at Lovelock, Pershing County. (Knight et al.).

PEA APHID (Acyrtosiphon pisum) - COLORADO - Ranged 200-20,000 per 100 sweeps of alfalfa in Pueblo, Crowley, Otero, Bent, and Prowers Counties. Heavier counts stunted growth. (Schweissing). MINNESOTA - Buildup in some alfalfa. Averages per 100 sweeps by county: Brown 40, Carver 10, Cottonwood 60, McLeod 60, Meeker 25, Redwood 200, Watonwan 200-400, and Waseca 200. (MN Pest Rpt.). ILLINOIS - Increased significantly in some alfalfa. Ranged 200-400 per sweep in north area field. Some damage expected if increase continues. (IL Ins. Rpt.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WISCONSIN - Heavy, 10-500 per 100 sweeps, on alfalfa in south-central, west-central, northwest, southwest, and east-central counties. Adults in many vegetable crops. (WI Pest Sur.).

SOYBEANS

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - INDIANA - Still potentially troublesome in susceptible, first-crop soybeans in southern part of west-central district, central district south of Indianapolis, south-central, and southeast districts. (Edwards, Meyer).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Adult (and number of traps) counts in pheromone traps by county week ending June 25: Washita and Caddo 500 (32), Jackson 13 (8), Tillman one (10), Kiowa 62 (8), Greer 5 (13), Harmon 6 (30). (OK Coop. Sur.). LOUISIANA - Adults in grandlure traps fewest where autumn treatments excellent. Field infestations on cotton still limited to "hot spots" with 10-15 percent punctured squares. One "hot spot" had 24 percent punctured squares. (Tynes). MISSISSIPPI - Damage increased as squaring cotton more prevalent statewide. Controls applied in some areas. Up to 12 percent feeding punctures on squares in 100 acres in Monroe County. (Anderson). ALABAMA - Egg laying becoming general, spotted due to age of cotton in various fields, but generally light on 2-18 percent of squares in south and central areas. Few egg laying punctures in oldest cotton in north area. First of season emergence of first field generation on 2 farms in Dallas and Montgomery Counties. (Hines et al.). SOUTH CAROLINA - Decrease continued in 32 grandlure traps in 30-acre cotton field in Orangeburg County, down to 1.2 per trap. (Walker).

BOLLWORMS (Heliothis spp.) - MISSISSIPPI - Counts and damage increased on cotton statewide. (Anderson). ALABAMA - Adult flights in south and central areas with eggs 2-40 per 100 cotton terminals. Natural control by beneficials effective except in few treated fields in Lowndes and Montgomery Counties. Larvae 50-75 per 100 terminals in few fields of 100 acres or more. Controls to be applied. Only BOLLWORM (H. zea) adults in flight. (McCabe).

TOBACCO THRIPS (Frankliniella fusca) - NORTH CAROLINA - Severe injury by this species and FLOWER THRIPS (F. tritici) in 5 problem cotton fields where no systemic control used in Cleveland County week ending June 25. Some fields replanted due to thrips and poor growing conditions. (Robertson).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - MISSISSIPPI - Still heavy on cotton in Monroe County and other areas. Light on 150-acre Noxubee County field. (Anderson).

TOBACCO

INSECTS

GREEN PEACH APHID (Myzus persicae) - NORTH CAROLINA - At or above threshold in 56 of 283 tobacco fields in Lenoir County. Heaviest infestation level of 75 percent plants heavily infested. (Harper, Reagan).

SUGAR BEETS

INSECTS

SUGARBEET ROOT MAGGOT (Tetanops myopaeformis) - NORTH DAKOTA - Late-emerging adults very heavy in Pembina County sugar beets. Early emerged adults (May) significantly lighter than in past years. (Anderson, Dregseth).

POTATOES, TOMATOES, PEPPERS

INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - ALABAMA - Larvae and adults damaged eggplants and tomatoes in gardens in Covington and Lee Counties. (Bond, Johnson). WISCONSIN - All stages 8+ per sweep in Central Sands potato field. Defoliation severe on individual plants; overall feeding moderate. (WI Pest Sur.). MICHIGAN - Eggs, larvae, and adults heavy on tomatoes and potatoes week of June 25. (Cress). RHODE ISLAND - Larvae heavy on unprotected potatoes and tomatoes in gardens in Kent County. (Larmie). MAINE - Adults active statewide. Damage heavy only in some gardens in south and central areas. (Gall).

POTATO STEM BORER (Hydroecia micacea) - NEW YORK - Larvae dissected from potato in St. Lawrence County. (Berndt).

GREEN PEACH APHID (Myzus persicae) - RHODE ISLAND - Some problems on commercial potatoes in spite of protective controls in Washington County. (Partyka). OREGON - Wingless forms on 900 acres of russet and norchip potatoes in Washington and Clackamas Counties. Averages per 50 bottom leaves of 3-10 on non-russet varieties and 1-5 on russet varieties in field margins where pre-plant treatments used. Controls applied on russet varieties. (Collins).

WEEDS

HEMP BROOMRAPE (Orobanche ramosa) - CALIFORNIA - Found in 120-acre field of tomatoes north of Hollister, San Benito County, by J.H. Edmonson. Collected June 16, 1976. Determined by D. Barbe. (CA Coop. Rpt.).

BEANS AND PEAS

INSECTS

PEA WEEVIL (Bruchus pisorum) - IDAHO - Adults active and counts very heavy throughout pea area of north region. Ranged 2-25 per sweep in selected fields in Latah, Clearwater, Nez Perce, and Lewis Counties. (Fitzsimmons et al.).

PEA APHID (Acyrtosiphon pisum) - IDAHO - Ranged 5-50 per sweep in selected lentil and pea fields in Latah, Nez Perce, and Lewis Counties. (Homan, O'Keeffe). WISCONSIN - Ranged 2-65 per sweep in peas in Waushara, Dodge, Fond du Lac, Calumet, and Columbia Counties; controls needed. Small nymphs heavy, indicating population explosion underway. Several hundred acres treated, more expected to be treated. Lighter in south-central and south-west counties. (WI Pest Sur.).

GENERAL VEGETABLES

INSECTS

GOLDEN TORTOISE BEETLE (Metriona bicolor) - ALABAMA - Adults heavy and damaging to small field sweetpotatoes. Controls applied. (Wyatt).

POTATO STEM BORER (Hydroecia micacea) - NEW YORK - Larvae dissected from rhubarb in St. Lawrence County. (Berndt).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - NEW MEXICO - Controls on onions continued in Dona Ana County. (NM Coop. Rpt.).

DETECTION

NEW STATE RECORD

INSECTS

A SOFT SCALE (Pulvinaria ericicola) - ALABAMA - Barbour. (p. 391).

NEW COUNTY AND ISLAND RECORDS

INSECTS

AN ADELGID (Pineus pini) - HAWAII - Molokai (p. 394).

BLUE ALFALFA APHID (Acyrtosiphon kondoi) - UTAH - Beaver (p. 385).

AN ERIOCOCCID SCALE (Eriococcus quercus) - ALABAMA - Lee (p. 391).

A EULOPHID WASP (Tetrastichus julis) - INDIANA - Huntington; OHIO - Allen (pp. 392-393).

A GRASSHOPPER (Dendrotettix quercus) - OKLAHOMA - Stephens (p. 393).

TULIPTREE APHID (Macrosiphum liriodendri) - CALIFORNIA - Sacramento (p. 391).

DECIDUOUS FRUITS AND NUTS

INSECTS

REDBANDED LEAFROLLER (Argyrotaenia velutinana) - MASSACHUSETTS - Active in west area fruit orchards, adults 11 per trap. (Wilder).

APPLE MAGGOT (Rhagoletis pomonella) - MASSACHUSETTS - Adults emerging in Hampshire County. (Prokopy). NEW HAMPSHIRE - Adults in deciduous fruit orchards in south area, egg laying expected next 5-10 days (Bowman).

WESTERN CHERRY FRUIT FLY (Rhagoletis indifferens) - MONTANA - First detection of year near Rawlins, Lake County, June 21 and in Ravalli County, June 28. (Bain, Merkeley).

APPLE APHID (Aphis pomi) - MAINE - Increased rapidly week of June 21. Currently very heavy in some apple orchards. Widespread in most areas. Retreatment will be needed in most orchards. (Gall).

PEAR PSYLLA (Psylla pyricola) - UTAH - Very heavy, many nymphs and honeydew on unsprayed fruit trees, but under control in Orem and other Utah County orchards. (Davis).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - SOUTH CAROLINA - Heavy in apple orchards in several Oconee County areas. Controls recommended. (Ridley).

EUROPEAN RED MITE (Panonychus ulmi) - OHIO - Increase noted June 28 on Red Delicious apple foliage. Averages per leaf by county: Fairfield 2.4 crawlers and 13 eggs on trees grafted to MM106 rootstock; Licking 8.6 crawlers and 24.4 eggs in orchard with standard rootstock. (Holdsworth).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Infestations noticeable on pecans in Payne and Carter Counties week ending June 25. (OK Coop. Sur.).

CITRUS

INSECTS

CITRUS MEALYBUG (Planococcus citri) - FLORIDA - Problems in grapefruit groves, especially in Indian River County and lower east coast areas. (FL Coop. Sur.).

SMALL FRUITS

INSECTS

BLUEBERRY MAGGOT (Rhagoletis mendax) - NEW JERSEY - Emergence peaked, flight to continue 21 days. Larvae heavy in untreated, abandoned blueberry fields. (Ins.-Dis. Newsltr.).

ORNAMENTALS

INSECTS

EUONYMUS SCALE (Unaspis euonymi) - RHODE ISLAND - Unusually heavy on various species of euonymus in commercial nurseries and on landscape plants in Providence County. (Relli).

FOREST AND SHADE TREES

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - MINNESOTA - Preliminary reports indicate dramatic increases in number of cases in metropolitan area. Total of 6,800 public and private elms to be removed to date in St. Paul compared with fewer than 4,000 cases for entire 1975 season (about 10,000 trees may be lost this season); Minneapolis has 2,100 trees to be removed compared with total of 1,688 removed in 1975. (MN Pest Rpt.).

INSECTS

SPRUCE BUDWORM (Choristoneura fumiferana) - NEW HAMPSHIRE - severe in northern Coos County, especially at Pittsburg. Defoliation 60 percent in several stands of older balsam fir trees with first, second, and much of third-year growth defoliated. Infestation decreases in severity in southern Coos County, spotty in older balsam and white spruce north and east of Colebrook and south of Errol. Pupation 40 percent at Second Lake, 100 percent at Connecticut Lake, with adult emergence at Stewartstown June 25. Emergence 95+ percent near Colebrook June 29. Adults very heavy throughout north and central Coos County where defoliation severe. Many balsam stands show distinct foliage reddening. Parasites emerged from less than 5 percent of pupae in samples. Infestation most severe on record for State and first significant outbreak since 1948. (Mason et al.).

WESTERN SPRUCE BUDWORM (Choristoneura occidentalis) - NEW MEXICO - New area of infestation at Sawmill Canyon, Philmont Boys Ranch, Colfax County; heavy defoliation on Douglas and white fir. (NM Coop. Rpt.).

DOUGLAS-FIR TUSSOCK MOTH (Orgyia pseudotsugata) - NEW MEXICO - Infested average of 70 percent of Douglas-fir in new infestation at Los Alamos, Los Alamos County. (NM Coop. Rpt.).

BALSAM TWIG APHID (Mindarus abietinus) - NEW HAMPSHIRE - Feeding damage noticeable on balsam fir throughout Coos County and Christmas tree plantations at Stewartstown, Coos County. Feeding on most terminals of young balsam fir in plantations. (Burger).

COOLEY SPRUCE GALL APHID (Adelges cooleyi) - OHIO - Emerging from galls in Portage County June 28, earlier than usual. (Kelly).

LARGE ASPEN TORTRIX (Choristoneura conflictana) - IDAHO - Almost completely defoliated Populus tremuloides (quaking aspen) in 6,000-acre area 15 miles northwest of Soda Spring, Caribou County. (Alldaffer, Stoltz).

MOURNINGCLOAK BUTTERFLY (Nymphalis antiopa) - OREGON - Larvae heavy on several hundred acres of quaking aspen at Black Butte, Deschutes County. Current infestation sufficient to cause defoliation; treatments planned. (Capizzi).

ELM LEAF BEETLE (Pyrrhalta luteola) - OREGON - Recent warm weather favored egg development and first instar larvae on American elm leaves at west Salem, Polk County. Hatch of 60 percent. (Penrose). MICHIGAN - Larvae skeletonized leaves of Chinese elm in Ingham County week of June 25. (Kennedy).

LOCUST LEAFMINER (Odontota dorsalis) - MARYLAND - Browned locust trees in Prince Georges, Anne Arundel, and Howard Counties. Leaf-lets in Prince Georges County 30 percent mined. (U. Md., Ent. Dept.).

A SOFT SCALE (Pulvinaria ericicola) - ALABAMA - Collected from ornamental Vaccinium arboreum (tree sparkleberry) on trunk at soil level at White Oak Creek, Barbour County, by C.H. Ray, March 23, 1976. Determined by M.L. Williams. This is a new State record. (McQueen).

AN ERIOCOCCID SCALE (Eriococcus quercus) - ALABAMA - Collected on Quercus velutina (black oak) at Auburn, Lee County, by C.H. Ray, March 17, 1976. Determined by M.L. Williams. This is a new county record. (McQueen).

TULIPTREE APHID (Macrosiphum liriodendri) - CALIFORNIA - Collected from yellow-poplar in park at Sacramento, Sacramento County, by E. Paddock, June 21, 1976. Determined by T. Kono. This is a new county record. (CA Coop. Rpt.).

BIRCH LEAFMINER (Fenusa pusilla) - WISCONSIN - Infestations continued in Marinette and Sheboygan Counties. (WI Pest Sur.). MAINE - Heavier on birch than in 1975; many defoliation reports week of June 21. Damage heavy on many trees statewide. (Gall).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - OKLAHOMA - Counts per head by county week ending June 25: Payne 800-1,000 on cows, averaged 2,000 on bulls; Noble averaged 400; Mayes 100-200; and Nowata moderate to heavy. (OK Coop. Sur.). INDIANA - Adult averages per side on mixed-breed cattle in Tippecanoe County: 50 on 5 heifers and steers in wind-blown site, 20 on 5 mixed-age cattle in more sheltered, shaded site on another farm. (Meyer). KENTUCKY - Means on mostly mixed-breed cattle by county: Carter 25 on 15 cows, zero on 6 calves; Rowan 64 on 4 cows; Nelson 73 on 10 Holstein heifers; Warren 8 on 10 cows, 217 on 5 cows, 185 on 4 calves; and Harrison 6 on 6 untreated cows, 0.42 on 12 treated feeder steers. (Christensen). MISSISSIPPI - Adults per head of cattle by county: Attala 200+, Leake 300+, Scott 1,000+, and Madison 500+. (Anderson). FLORIDA - Averaged 200 per head in small beef herd at Gainesville, Alachua County. (FL Coop. Sur.). NEW HAMPSHIRE - Averages of 25-30 per head on dairy cattle at Piermont, Grafton County, and Colebrook, Coos County. (Burger).

FACE FLY (Musca autumnalis) - OKLAHOMA - Moderate to heavy on cattle in Craig and Nowata Counties week ending June 25. (OK Coop. Sur.). MISSOURI - Ranged 0-26 (averaged 11) and 0-4 (averaged 7) on 2 south-central area herds. (Munson). INDIANA - Adult averages per face on mixed-breed cattle in Tippecanoe County: 3 on

heifers and steers at wind-blown site, 15 on 5 mixed-age cattle in more sheltered, shaded site on another farm. (Meyer). KENTUCKY - Means on cattle of mostly mixed breeds by county: Rowan 11 on 4 cows; Warren 8 on 10 Holstein cows, 9 on 5 Angus feeder steers, 3 on 5 white-faced feeder steers, 10 on 5 cows, 8 on 4 calves; and Harrison 68 on 6 untreated cows, 26.5 on 12 treated feeder steers. (Christensen). NEW HAMPSHIRE - Averaged 10-15 per face on dairy cattle at Piermont, Grafton County, and 5 per face at Colebrook, Coos County. (Burger).

MOSQUITOES - MINNESOTA - Aedes vexans counts doubled in light traps June 19-25. Coquillettidia perturbans doubled from previous week. Rest of catch lighter than in previous week. Bite ratings in descending order: C. perturbans, A. stimulans, and A. vexans. (MN Pest Rpt.). MISSISSIPPI - Culex quinquefasciatus heavy in rural Oktibbeha County, increasing. Controls maintained light urban populations. (Bertsch). FLORIDA - Recent torrential rains at Gainesville, Alachua County, increased nuisance of floodwater species. Psorophora columbiae heaviest. Aedes atlanticus, A. infirmatus, P. ferox, P. ciliata, Coquillettidia perturbans, Anopheles crucians, and Culex spp. caused problems. (FL Coop. Sur.). MASSACHUSETTS - Adult counts at Amherst, Hampshire County: Aedes vexans, A. cinereus, A. canadensis, and Coquillettidia perturbans very heavy; Culex spp. and Anopheles punctipennis increasing but moderate; Aedes excrucians moderate; Aedes abstratus and Anopheles walkeri still present. (Edman). MAINE - Mosquito annoyance heavy in many areas. Single-generation Aedes spp. at peak. Heavy rain past 14 days likely to produce infestations of multiple-generation species such as A. vexans, A. triseriatus, and A. hendersoni. (Gall).

TABANID FLIES (Chrysops spp.) - NEW HAMPSHIRE - Still locally heavy statewide. C. vittatus, C. macquarti and C. moechus heavy at Piermont, Grafton County. Several species very heavy at Pittsburg, Coos County. About 50-60 flies between first and second Connecticut Lakes. Most common biting species C. excitans, C. sordidus, C. mitis, C. niger, and C. ater. C. shemani and C. lateralis heavy in southern Coos County. (Burger).

BLACK FLIES (Simulium spp.) - NEW HAMPSHIRE - Very heavy in northern Coos County between first and second Connecticut Lakes. About 30 females landing and biting per minute during day and 40 per minute at dusk. Adults still heavy along Androscoggin River south of Errol, Coos County; about 10-15 landing and biting per minute. S. tuberosum larvae and pupae very heavy on submerged vegetation in river. S. decorum larvae and pupae very heavy on spillways at Dixville, Coos County. (Burger).

AMERICAN DOG TICK (Dermacentor variabilis) - IDAHO - Taken from human at Twin Falls, Twin Falls County, and from dog at Orofino, Clearwater County. First year this tick reported south of Lewiston, Nez Perce County. (Reusch et al.).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

A EULOPHID WASP (Tetrastichus julis) - Larvae recovered from Oulema melanopus (cereal leaf beetle) larvae collected from oats

in these States: INDIANA - From Jackson Township, Huntington County, by H. Bollinger, May 5, 1976. Determined by P. DeWitt. OHIO - From Monroe Township, Allen County, by W.E. Wille, June 21, 1976. Determined by V.E. Montgomery. New county records for both States. Other *T. julis* recoveries: MICHIGAN - Edwards, Horton, and West Branch Townships, Ogemaw County, June 22; OHIO - Jefferson Township, Guernsey County, May 3 and 19. (PPQ).

FEDERAL AND STATE PROGRAMS

DISEASES

BLACK STEM RUST (*Puccinia graminis* var. *tritici*) - WISCONSIN - Infection light in one winter wheat field in Racine and Kenosha Counties. (WI Pest Sur.).

INSECTS

GRASSHOPPERS - MONTANA - Mainly *Melanoplus bivittatus*, significantly reduced by a fungal disease. *M. sanguinipes* also affected through much of northeast, east, and southeast areas. (Bain, Henry). UTAH - Grasshopper nymphs very heavy, damaging research grass plots at north Logan, Cache County, Bureau of Land Management. (Haws). Nymphs very heavy on alfalfa at Newton, Cache County, and North Ogden, Weber County. (Davis). Moderate in many Cache County localities. (Knowlton). OKLAHOMA - Two *Dendrotettix quercus* adults taken on blackjack oak 4 miles south and 3 miles west of Marlow, Stephens County, June 23, 1976. Collected and determined by D.C. Arnold. This is a new county record. (OK Coop. Sur.). NEBRASKA - Grasshoppers ranged 10-40 per square yard in northern Morrill County rangeland. About 80 percent *Ageneotettix deorum*, majority of remaining 20 percent, *Cordillacris* spp. and *Aulocara ellioti*. Some *Melanoplus* spp. present. Infested area of at least 15,000 acres, possibly up to 100,000 acres. Up to 30 per square yard in 2,000-acre area of northwest Sheridan County range, mainly *Drepanopterna femoratum*. (Hagen). SOUTH DAKOTA - Grasshoppers becoming economic on rangeland in Lawrence and southern Butte Counties. Ranged 9-15 per square yard on about 30,000 acres in Fall River and Custer Counties. (Wienks). NORTH DAKOTA - Infested total of 3,452 acres of crested wheatgrass in Billings and Slope Counties at 30 per square yard. *Ageneotettix deorum* and *Melanoplus sanguinipes* dominant. Unfavorable temperatures prevented large outbreak. (Brandvik et al.). MINNESOTA - Grasshoppers per square yard of alfalfa by county: Brown 4-8, Cottonwood 1-2, Martin 2-4, Meeker 2-4, Redwood 4-8, Watonwan 2-4, and Wadena 15. Control needed in Lyon County. Mostly *M. bivittatus* in second to fourth instars. (MN Pest Rpt.).

JAPANESE BEETLE (*Popillia japonica*) - GEORGIA - Heavy on Barrow County ornamentals. (Garrison). SOUTH CAROLINA - Heavy in Oconee County apple groves, controls recommended. (Ridley). NORTH CAROLINA - Averaged about 15 per trap per week in Lincoln County beginning June 1. Current collections averaged 50+ per trap per week. (NC Dept. of Agric.). VIRGINIA - Adults damaged silks on edge of corn fields in Westmoreland County. (Allen). MARYLAND - Adults increased statewide. Heavier than usual on grapes, cherries, and peaches in Washington County. (U. Md., Ent. Dept.). DELAWARE - Adults heavy in northern New Castle County; feeding injury noticeable on grapes,

wisteria, hazel nuts (filberts), and roses. (Burbutis, Kelsey).
MASSACHUSETTS - Many adults emerging and feeding on roses in
Hampden and Hampshire Counties. (Arnott et al.).

MORMON CRICKET (Anabrus simplex) - NEVADA - Many bands adjacent
to State Highway 51 in Pine Valley, Eureka County, with movement
into meadowland. Bands in Indian Creek and Porter Ranch areas
southwest of Jiggs, Elko County. Mop up baiting in localized spots
in Bailey Mountain, Coffin Mountain, Maples Canyon area, Sulfur
Spring Range in Elko County, adjacent to dense overcover vegetation
which prevented adequate controls of previous week. (Kail). UTAH -
Infested about 3,000 acres of range outside Enterprise, Washington
County. (Huber).

SCREWWORM (Cochliomyia hominivorax) - Total of 448 cases reported
from continental U.S. June 13-19 as follows: Texas 439, New Mexico
3, Arizona 6. Total of 601 cases confirmed in portion of Barrier
Zone in Republic of Mexico. Total of 314 cases reported in Mexico
south of Barrier Zone. Number of sterile flies released this
period totaled 166,258,500 as follows: Texas 139,717,500; New
Mexico 7,974,000; Arizona 18,567,000. Total of 9,787,500 sterile
flies released within Barrier of Mexico. (Vet. Serv.)

WHITEFRINGED BEETLES (Graphognathus spp.) - ALABAMA - First adults
of season feeding occasionally on soybean leaves in Morgan County
June 28. Adults per 60 feet of host in some eastern Geneva County
fields: Peanuts 12, corn 4, and soybeans 5. (Wilson, Stephenson).

HAWAII PEST REPORT

Detection - Infestation by an ADELGID (Pineus pini) moderate on
twigs, branches, and trunk of one Pinus pinaster (cluster pine) in
Onini Gulch (Molokai Forest Reserve), Molokai. Collected by F.W.
Wong, April 6, 1976. Determined by J. Fujii. This is a new island
record. (Wong, Fujii). Infestations of a WHITEFLY (Orchamoplatus
mammaeferus) on Oahu in lower Palolo Valley, Kaimuki, and Kapahulu.
Light on leafcrotton so far with only several leaves in hedge
planting colonized. (Chun, L. Nakahara).

General Vegetables - LEAFMINER FLIES (Liriomyza spp.) counts and
damage heavy on one acre of tomato at Pulehu, Maui, and 0.5 acre
of cucumber (60-75 percent of leaves heavily mined) at Panaewa,
Hawaii. Light counts and damage on 2 acres of potatoes and one
acre of tomatoes at Waiakoa, Maui, and on 1,000 square feet each
of cucumbers and soybeans at Kurtistown, Hawaii. (Matayoshi et al.).
GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) heavy (many
leaves with 100+ adults per leaf) on one acre of tomatoes at
Waiakoa, Maui. Moderate on adjacent plantings of 2 acres of potatoes
and 0.5 acre of snap beans. (Miyahira).

Ornamentals - Counts and damage (5 percent of blossoms discarded) of
a THRIPS (Chaetanaphothrips orchidii) light on regularly sprayed
anthurium blossoms on 3 acres at Waiakea Uka, Hawaii. (Matayoshi, L.
Nakahara).

Turf and Pasture - SPOTTED ALFALFA APHID (Therioaphis maculata) -
Light on scattered alfalfa plants at Hickam Air Force Base and
black medic clover (sparse growth due to dry conditions) at Hickam
Air Force Base and Wahiawa, Oahu. (Teramoto).

LIGHT TRAP COLLECTIONS

LIGHT TRAP COLLECTIONS		Temperature	Precipitation	Type of trap	Species	Number	Notes
Locality	Date	F	inches	BL = blacklight UV = ultraviolet O = ordinary	Species	Number	Notes
CALIFORNIA							
Clements	6/22	63-93		BL			
Stockton	6/20	54-82		BL			
FLORIDA							
Gainesville	6/25-7/1			2BL			
INDIANA (Counties)							
Randolph	6/18-24			BL			
Vanderburgh	6/18-24			BL			
MICHIGAN (Counties)							
Bay	6/11-18			BL			
Lenawee	6/11-18			BL			
MINNESOTA							
Fergus Falls	6/27-7/7	52-86		BL			
Worthington	6/27-7/7			BL			
MISSISSIPPI							
Stoneville	6/25-7/1	64-91	2.31	2BL			
MISSOURI (County)							
Platte	6/28-7/2			BL			
NEBRASKA							
Aurora	6/24-30			BL			
Scottsbluff	6/21-27			BL			
NEW HAMPSHIRE							
Lee	6/25			BL			
Pittsburg	6/25			BL			
NEW JERSEY							
Harrisonville	6/23-29			7BL			
Vineand	6/25-29			7BL			
NORTH DAKOTA							
Jamestown	6/24, 28			BL			
Mountain	6/24, 28, 29			BL			

LIGHT TRAP COLLECTIONS

Locality	Temperature Air °F	Precipitation inches	Type of trap	No. of insects	Species	Crops
OHIO						
Wooster 6/26-7/2			3BL	161		
OREGON						
Dever 6/24-30			BL	7		
St. Paul 6/24-30			BL			
SOUTH CAROLINA (County)						
Dillon 6/26-7/1			2BL		208	
WISCONSIN						
Evansville 6/22-28			BL			
Hancock 6/24-30			BL	1		

Status of the European Corn Borer in 1975^{1/}

Introduction: Surveys to determine the abundance of European corn borer (*Ostrinia nubilalis* (Hübner)) in the fall of 1975 were conducted by cooperating agencies in 14 States. All survey data, summaries, and records of field observations were processed by the New Pest Detection and Survey Staff in Hyattsville, Maryland.

The 1975 European corn borer survey was conducted during late summer and early fall. The survey is designed to measure the fall populations of European corn borer larvae and is conducted during a favorable time to include a high percentage of late instars, wherever possible. Except for some differences in compiling data, the accepted survey methods were followed in all cases. The survey was conducted on a district basis wherever possible in 1975. A district is usually a group of counties within a State, in most cases based on Crop Reporting Districts.

New Distribution: European corn borer was reported for the first time in two counties in Alabama and four counties in Florida.

Abundance: European corn borer fall populations showed increases in all 12 North Central States reporting in the survey. Increases also were noted in Kentucky and Delaware. Comparisons can not be made in Maryland or North Carolina as surveys were not conducted in 1975.

The fall European corn borer survey in Illinois indicated a statewide population nearly two times greater in 1975 than in 1974, averaging 73 and 36 larvae per 100 plants, respectively. Of 44 counties surveyed, 30 showed increases in population and 14 showed decreases. Six of 9 districts showed increases, one a decrease, and two remained about the same. The heaviest averages were in the northwest and southwest districts with 184 and 103 larvae per 100 plants, respectively. Three counties had average populations of more than 200 larvae per 100 plants--Ogle 218, Whiteside 293, and Madison 214. Eight counties in the northwest, west, southwest, and southeast districts averaged between 100 and 200 larvae per 100 plants.

European corn borer populations in Iowa averaged 144 larvae per 100 plants on 59 percent of the stalks. The potential for economic damage in 1976 is greatest in the western third of the State and in the southeastern counties.

Results of the fall European corn borer survey in Kansas showed the percent of infested cornstalks to be somewhat higher in 1975 than in 1974, particularly in the northeast, east-central, south-central, and northwest districts.

^{1/} Survey data provided by State agricultural agencies. Data compiled and summarized by New Pest Detection and Survey Staff, Plant Protection and Quarantine Programs, Animal and Plant Health Inspection Service, United States Department of Agriculture.

The State average in Michigan increased but not significantly. First-generation populations were light, but generally good weather in July and August allowed a large second-generation adult flight to occur, favoring an average overwintering population.

The State average of fall European corn borers in Minnesota increased more than three times. Although a heavier first generation is expected in 1976, populations for the year are expected to be relatively light.

In Missouri, fall European corn borers averaged 146 per 100 plants, up from 109 borers in 1974. Borers infested 71 percent of the plants, up from 67 percent in 1974.

Fall European corn borer numbers in Nebraska were very heavy in the northeast, east, and central districts. A significant amount of stalk breakage and ear droppage occurred in the east (75 percent), southeast (51 percent), and northeast (36 percent) districts.

Fall European corn borer populations and infestations in southeastern North Dakota have more than doubled.

In Delaware, the 1975 State average of 389 borers per 100 plants increased 18 percent over the 1974 average.

Table 1. Summary by States of European Corn Borer Abundance in Corn, Fall of 1975, Compared with Data for 1974

	1974				1975				Comparable Districts or Counties			
	:No. of :Districts :		:Average No. :of Borer :		:No. of :Districts :		:Average No. :of Borer :		:No. of :Districts :		:Average No. :of Borer :	
	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :
States	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :	:Surveyed :	:100 Plants :
Eastern												
Delaware	1	321	3	1	389	3	1	321	389	-	-	-
Maryland	1	-	-	-	-	-	-	-	-	-	-	-
Total	1	3	3	1	3	3	1	321	389	-	-	-
Average 2/												
North Central												
Illinois	9	36	44	9	73	44	9	36	73	9	36	73
Indiana	12	27	92	12	34	92	12	27	34	12	27	34
Iowa	12	23	99	12	144	99	12	23	144	12	23	144
Kansas	9	35	50	9	59	61	9	35	59	9	35	59
Michigan	3/	98	20	5	103	20	5	98	103	5	98	103
Minnesota	7	10	34	7	37	34	7	10	37	7	10	37
Missouri	8	109	39	8	146	40	8	109	146	8	109	146
Nebraska	5	78	25	5	461	25	5	78	461	5	78	461
North Dakota	3/1	15	5	1	34	5	1	15	34	1	15	34
Ohio	5	33	33	5	57	33	5	33	57	5	33	57
South Dakota	5	65	32	5	75	32	5	65	75	5	65	75
Wisconsin	3/	9	54	9	22	54	9	11	22	9	11	22
Total	87	513	513	87	524	524	87	524	524	87	524	524
Average 2/												
Southern												
Kentucky	4	10	17	5	40	19	4	11	40	4	11	29
North Carolina	4/	32	69	-	-	-	-	69	-	-	69	-
Total	8	86	86	5	19	19	5	40	19	5	40	29
Average 2/												

1/ No survey conducted in 1974 or 1975.
2/ Weighted averages based on districts surveyed.
3/ Averages based on field rather than county or district averages.
4/ Not included in previous fall surveys.

Table 2 - European Corn Borer Abundance in Corn
Fall of 1975, Compared with Data for 1974

State (Districts or Counties)	Average Number: of Borers Per : 100 Plants :		State (Districts or Counties)	Average Number of Borers Per 100 Plants	
	1974	1975:		1974	1975
<u>Delaware</u> (Agr. Expt. Sta.)			<u>Iowa</u> (State Dept. Agr.; Ext. Ser.; Ent. Dept. Iowa State Univ.; PESS, ARS, USDA)		
New Castle	124	157	District I	18	191
Kent	346	451	District II	4	61
Sussex	492	560	District III	2	40
Average	321	389	District IV	47	356
<u>Illinois</u> (Natural History Survey, Ext. Ser.)			District V	5	121
Northwest	17	184	District VI	3	64
Northeast	9	63	District VII	39	343
West	28	64	District VIII	11	68
Central	25	26	District IX	21	225
East	22	21	District X	46	102
West-southwest	64	72	District XI	26	59
East-southwest	36	49	District XII	51	97
Southwest	54	103	Average	23	144
Southeast	109	76	<u>Kansas</u> (Ins. Sur.)		
Average	36 <u>1/</u>	73 <u>1/</u>	Northeast	92	165
<u>Indiana</u> (Ext. Ser., Expt. Sta.)			North Central	24	78
North-northwest	22	32	East Central	85	68
North-northcentral	23	58	Central	15	5
North-northeast	33	54	Southeast	63	105
Northwest	29	15	South Central	13	40
North Central	11	27	Northwest	4	31
Northeast	8	22	West Central	6	13
Southwest	25	37	Southwest	9	23
South Central	9	4	Average	35	59
Southeast	4	13	<u>Kentucky</u> (Ins. Sur.)		
South-southwest	87	71	District I	1	28
South-southcentral	28	30	District II	16	31
South-southeast	12	31	District III	14	30
Average	27	33	District V	10	32
			District VI	-	77
			Average	10	40

1/ Average based on comparable counties surveyed in 1974 and 1975, rather than districts.

Table 2 (Continued)

State (Districts or Counties)	Average Number: of Borers Per : 100 Plants :		State (Districts or Counties)	Average Number of Borers Per 100 Plants	
	1974	1975:		1974	1975
<u>Michigan</u> (Ins. Sur.)			<u>Nebraska</u> (Agr. Expt. Sta.; Ext. Ser., Ins. Sur.)		
District I	95	109	Northeast	166	743
District II	86	109	East	82	631
District III	108	111	Southeast	46	225
District IV	87	96	Central	51	431
District V	<u>80</u>	<u>92</u>	South	<u>47</u>	<u>274</u>
Average	91	103 <u>2/</u>	Average	78	461
<u>Minnesota</u> (State Dept. Agr.)			<u>North Carolina</u> (Ins. Sur.)		
Southwest	13	40	Tidewater area	41	
South Central	1	45	Coastal Plain area	35	
Southeast	2	19	Piedmont area	21	
West Central	21	60	Mountain area	<u>36</u>	
Central	10	46	Average	32	<u>3/</u>
East Central	5	31			
Northwest	<u>21</u>	<u>18</u>	<u>North Dakota</u> (State Dept. Agr.)		
Average	10	37	Southeast	15 <u>4/</u>	34 <u>4/</u>
<u>Missouri</u> (Ext. Ser., Ins. Sur.)			<u>Ohio</u> (Ext. Ser.; ARS, USDA)		
District I	100	194	Northwestern	37	87
District II	97	147	West Central	33	46
District III	127	187	Central	24	40
District IV	88	94	Southwestern	36	30
District V	88	107	Northeastern	<u>17</u>	<u>59</u>
District VI	146	179	Average	33 <u>5/</u>	57 <u>5/</u>
District VII	51	74			
District IX	<u>170</u>	<u>188</u>			
Average	108	146			

2/ Averages based on field averages rather than district averages.

3/ No report

4/ Averages based on field averages rather than on county averages.

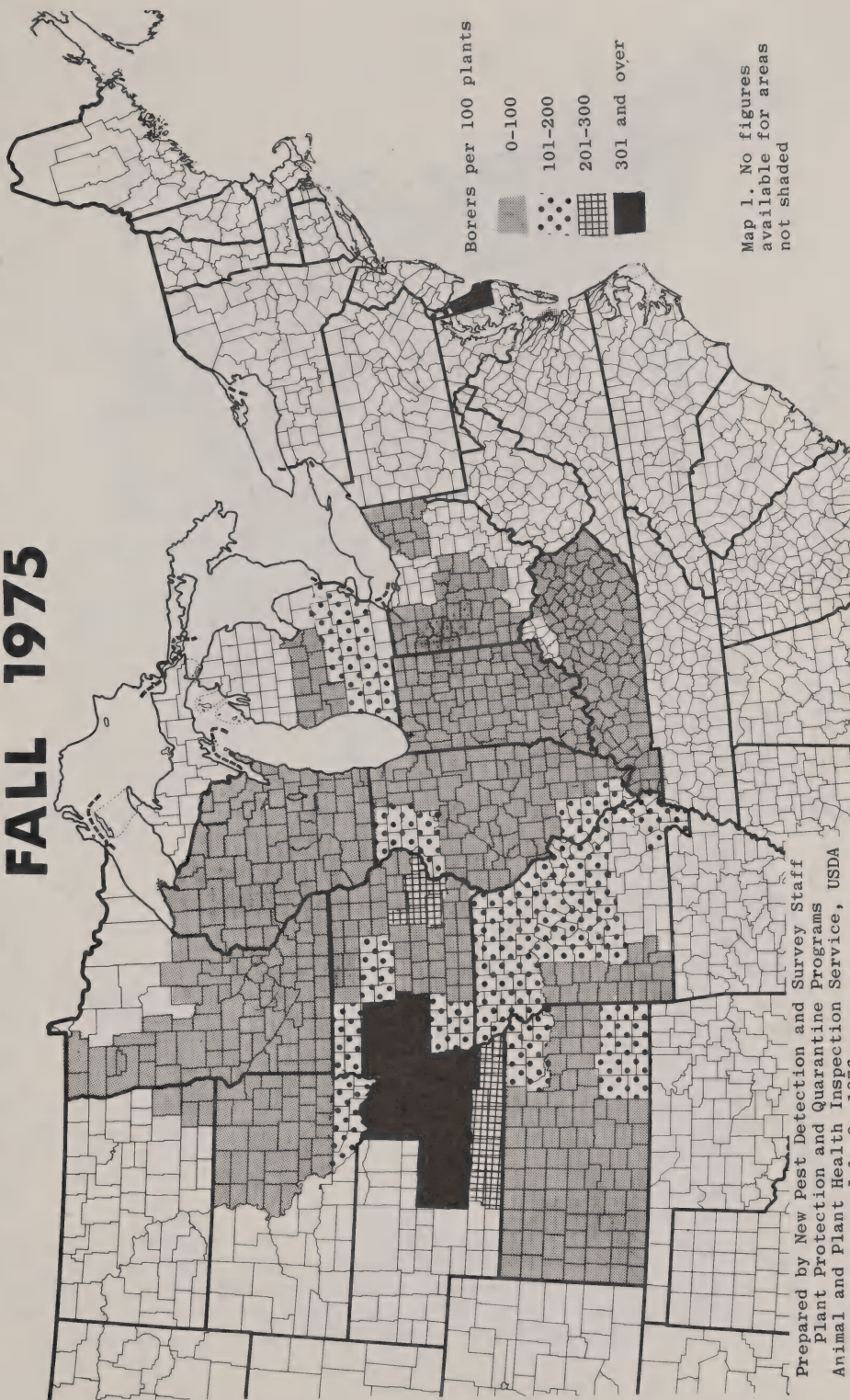
5/ Averages based on counties surveyed.

Table 2 (Continued)

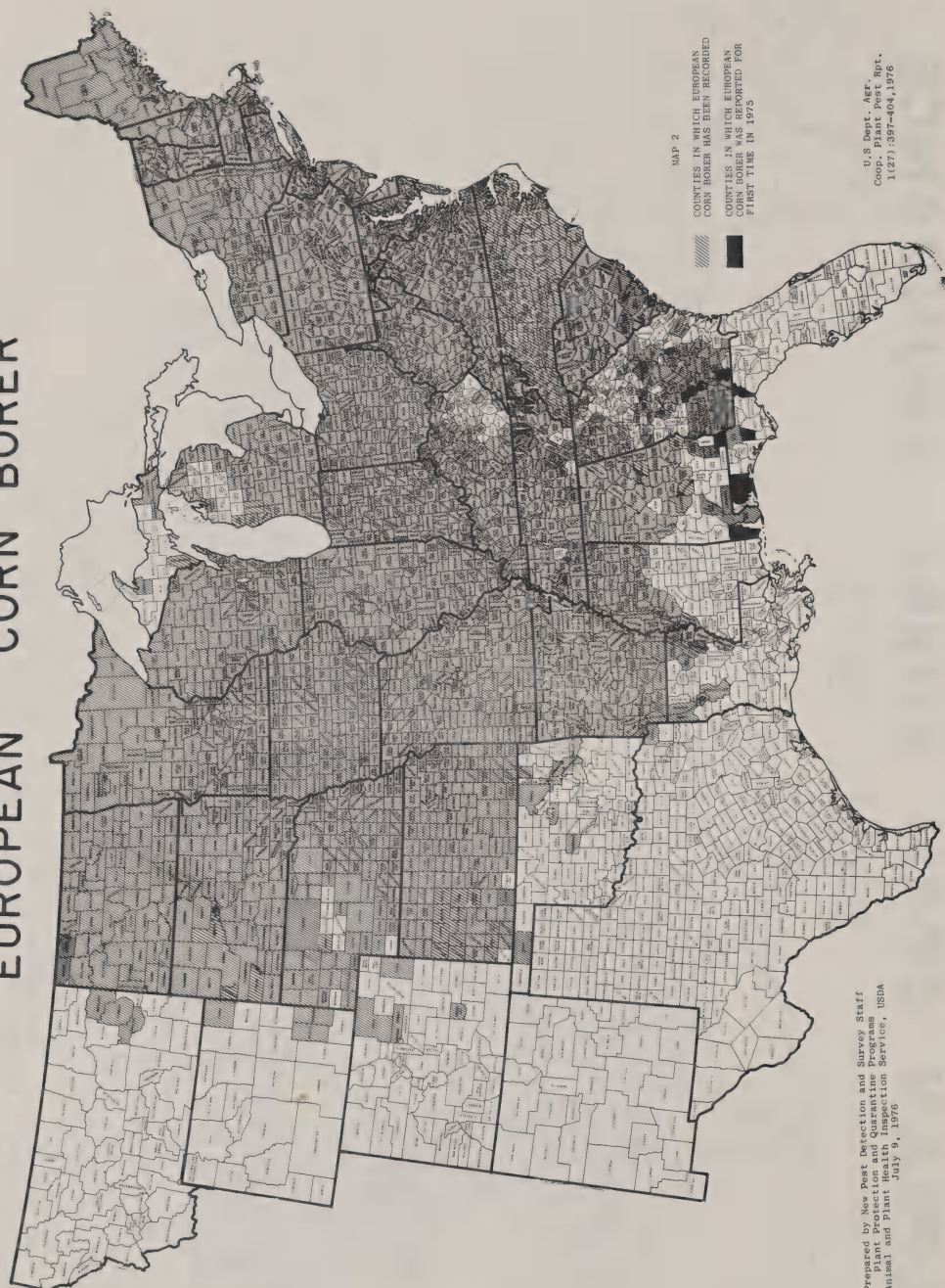
State (Districts or Counties)	Average Number of Borers Per 100 Plants	
	1974	1975
<u>South Dakota</u>		
(Agr. Expt. Sta., Ext. Ser.)		
North Central	29	35
Northeast	38	52
Central	38	32
East Central	92	75
Southeast	<u>127</u>	<u>179</u>
Average	65	75
<u>Wisconsin</u>		
(State Dept. Agr.)		
Northwest	26	45
North Central	22	23
West Central	25	17
Central	8	18
Southwest	11	19
South Central	2	13
Southeast	2	44
East Central	10	20
Northeast	<u>19</u>	<u>31</u>
Average	11 <u>6</u> / ₁₀	22 <u>6</u> / ₁₀

6/ Average based on 228 dent corn
fields rather than district
averages.

EUROPEAN CORN BORER ABUNDANCE FALL 1975



EUROPEAN CORN BORER



Prepared by New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service, USDA
July 3, 1976

WEATHER OF THE WEEK ENDING JULY 4

Reprinted from Weekly Weather and Crop Bulletin Supplied by National Weather Service, NOAA.

HIGHLIGHTS: Widespread precipitation turned up across the eastern two-thirds and northwest corner of the Nation. Temperature followed suit, slipping below normal throughout these areas except in the Northeast. Above normal readings broke or matched previous record highs in Idaho and sections of Washington. Severe weather in the central United States focused on Illinois the first half of the week, then produced heavy rains and local flooding in Kansas, Missouri, and the surrounding areas.

TEMPERATURE AND PRECIPITATION: On the heels of a stationary frontal system, showers and thundershowers Monday stretched from Kansas along the Ohio Valley and the lower Great Lakes region into New York. Associated with the front, severe afternoon thunderstorms spawned 17 tornadoes across the area. More than half of the twisters zeroed in on Illinois but caused no major damage or injury. Winds associated with severe weather that whirled across North Dakota, Minnesota, and Kentucky reached 80 m.p.h. in places. Except for a few mountain showers in the lower regions daytime precipitation left the Rockies and the Far West untouched. Though slightly cooler air along the northern coast took the edge off California's hot spell, most of the State still sweltered. The mercury inched upward in New England, the central Plains, and the West and scored nearly 100 degrees in sections of Kansas, Colorado, Utah, and Nevada. Tuesday morning's thunderstorms made little noise but by noon picked up from Oklahoma and Kansas through the central Mississippi Valley into the upper Great Lakes region into the western Ohio Valley. Severe weather again made news in north-central Illinois where nine tornadoes damaged crops and some property. Meantime, temperatures warmed into the 80's from the gulf coast across the southern Plains, Mississippi Valley, and east to the Atlantic coast. Readings in the 70's favored the Great Lakes region, New England, and the northern and central Plains.

In the Pacific Northwest, unseasonably hot air gripped Idaho and portions of Washington. In Idaho, Boise scored a record breaking 100 degrees and Pocatella matched a previous record high of 96 degrees. A cold front moving through Washington kept maximum temperatures in the western half of the State in the mid 60's to mid 70's. Severe weather persisted at midweek throughout the Southeast as a line of heavy thunderstorms tramped across portions of Arkansas and Tennessee. Daytime showers and thunderstorms gathered momentum as they moved eastward. Wednesday afternoon precipitation included areas from the Ohio Valley and central Great Lakes region through the northern Atlantic coast inland to the Appalachians. Ahead of the cold front, rainfall also dampened the southern Atlantic and gulf coast areas.

Low clouds and morning fog broke a weeklong record-breaking heat wave in the Southwest. In the northern Rockies though, the heat was still on, thanks to a high pressure system centered over Minnesota. Warm southerly winds pushed maximum temperatures into the mid to upper 90's in portions of Montana (Great Falls--99 degrees and Havre--96 degrees), Idaho, and Wyoming. Scattered showers and

thundershowers highlighted Thursday's national weather map. Rain appeared from the Rockies across the lower Great Plains into the lower Mississippi Valley. Forecasters traced more precipitation along the southern Atlantic and gulf coasts and from the eastern Great Lakes region into northern New England. Afternoon temperatures climbed haltingly even though generally fair skies covered most of the Nation. Cloaked in a cool air flow, the eastern Great Lakes region and northern Appalachians measured readings in the 60's and thermometers in Maine registered in the 50's and 60's.

Weather records compiled for June credited San Diego, California, with its warmest June on record. To the north, Yakima, Washington, looked back on its third coolest June on the books. On Friday, heavy thunderstorms came to life along a warm front in parts of Kansas, Missouri, and Arkansas. The primary target of locally heavy rains, southeast Kansas, reported nearly 7 inches of rain in a 24-hour period in one location. A survey of isolated severe weather turned up one tornado near Ocala, Florida, and 80 m.p.h. winds in northeast Oklahoma. Heavy rain and local flooding darkened the weekend weather prospects in the central United States. In just a day's time Joplin and Lamar in Missouri, and Beaumont in southeast Kansas collected around 9 inches of rain. A total 12.5 inches of rain in 24 hours in Cherryvale, Kansas, fell just short of its alltime record.

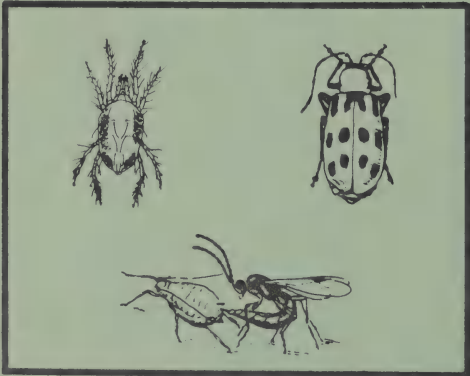
Though Saturday evening rains tapered off in southeast Kansas, thundershowers still rumbled from southern Missouri southward into the Gulf States. A slow moving thunderstorm produced heavy rains Sunday that in turn triggered flash floods in parts of Texas. Except for scattered moisture in southern and eastern United States, pleasant dry conditions wrapped up the weather week for most of the Nation.

NATIONAL WEATHER SERVICE 30-DAY OUTLOOK

JULY 1976

The National Weather Service's 30-day outlook for July is for temperatures to average above seasonal normals over the northern half of the Great Plains as well as in the northern Mississippi Valley, most of the Great Lakes, the Great Basin and the far Southwest. Below normal averages are indicated for the South and also for northern and central portions of the Pacific coast. In unspecified areas near normal temperatures are in prospect. Rainfall is expected to exceed the median amount in the Northwest and also over the Gulf and Atlantic Coast States, the southern Plateau and most of Texas. Elsewhere less than the median value is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.



aSB823

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Cooperative PLANT PEST REPORT



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OF AGRICULTURE

This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

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Hyattsville, Maryland 20782

COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

CORN LEAF APHID moderate to heavy on sorghum in Texas, Oklahoma, and Kansas. (pp. 409-410).

POTATO LEAFHOPPER heavy in Wisconsin, Michigan, and Maryland. (p. 410).

MAIZE DWARF MOSAIC VIRUS affected corn in eastern Kansas. (p. 410).

EUROPEAN CORN BORER pupae in Missouri and Iowa. Adult flights by first and probably second generations spread over long period in Wisconsin. (p. 411).

CORN ROOTWORM adults appeared 7 days early in South Dakota. First adults in Iowa, Illinois, and Wisconsin. (pp. 411-412).

SOUTHERN BLIGHT caused heavy losses to tomatoes in central Tennessee. (p. 415).

Control problems on COLORADO POTATO BEETLE in Pennsylvania and Rhode Island. (p. 415).

PEA APHID nymphs heavy on peas in Wisconsin. (p. 416).

FIRE BLIGHT severe in parts of Wisconsin. (p. 417).

CEREAL LEAF BEETLE severely damaged corn in a part of Ohio. (p. 420).

CITRUS BLACKFLY status in Florida. (p. 420).

JAPANESE BEETLE heavy in Virginia, Maryland, Rhode Island, Massachusetts, and New Hampshire. (p. 421).

Detection

AZALEA LACE BUG is new for Hawaii. (p. 422).

First time RANGE CATERPILLAR larvae found in Oklahoma. (p. 422).

A SCARAB is a new pest for lawns in Maryland. (p. 412).

For new county records, see page 416.

Reports in this issue are for the week ending July 9, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ARMYWORM (*Pseudaletia unipuncta*) - NEW YORK - Active on no-till field corn in Rensselaer County week ending July 2. (Birmingham). MASSACHUSETTS - Flights heavy in southeast area, 40-50 adults per blacklight trap. (Tomlinson).

ASTER LEAFHOPPER (*Macrosteles fascifrons*) - WISCONSIN - Counts by area: Dodge County 7 per sweep in oat field, southwest and south-central counties 2-4 per sweep of alfalfa, Spring Green and Central Sands 8-16 per 50 sweeps of potatoes. Heavy counts remain threat to susceptible vegetables. (WI Pest Sur.).

CORN EARWORM (*Heliothis zea*) - FLORIDA - Damage to field corn in Jackson County generally lighter this year than last. Damaged 40-50 percent of ears week ending July 2. (FL Coop. Sur.). TEXAS - Feeding in corn whorls in Moore, Hutchinson, and Dallam Counties week ending July 2. (Patrick). OKLAHOMA - Counts by county week ending July 2: Tillman 2-3 per ear on garden corn; Jackson light in most sorghum fields, infested up to 26 percent in isolated fields; Greer light; and Caddo light in some peanut fields. Current counts by county: Southwest 0-4 per 10 plants in whorls of grain sorghum, Jackson 4 per trap per week, Greer 28 per trap per week, Mayes light numbers damaged garden green beans. (OK Coop. Sur.). ARKANSAS - Third-instar larvae 12-15 per 100 sweeps of alfalfa on farm near Fayetteville, Washington County. (Boyer). MARYLAND - Eggs on corn silks in isolated "hotspots" on Eastern Shore counties. Heavy counts expected due to dry spring. (U. Md., Ent. Dept.).

CORN LEAF APHID (*Rhopalosiphum maidis*) - TEXAS - Continued increase on preboot sorghum week ending July 2. Beneficials controlling. Light to moderate in most sorghum in High Plains and throughout panhandle. (Latham et al.). OKLAHOMA - Counts per plant by county week ending July 2: Southwest 45-350 per sorghum plant, McCurtain 0-100 (averaged 15), Craig moderate, Texas light, Payne averaged 150. Current counts by county: Pottawatomie moderate to heavy on sorghum, southwest moderate (up to 250 per plant), and Texas and McCurtain moderate. (OK Coop. Sur.). KANSAS - Heavy in whorls of scattered early planted large sorghum in southwest area week of July 2. (Bell). WISCONSIN - Small colonies on less than 5 percent of corn in most fields in south half of State. Colonies seldom contained 10+ aphids. (WI Pest Sur.).

GREENBUG (*Schizaphis graminum*) - TEXAS - Counts per grain sorghum plant by county week ending July 2: Jones and Fisher averaged fewer than 100, 300+ in one field; Knox 100-300 per leaf in some fields, sorghum 12 inches or taller, older sorghum beginning to head; Bell, Coryell, and Hill colonies in most areas; Coleman, Runnels, Tom Green, Mitchell, and Gillespie light to moderate; Hale 0-10 in about 80 percent of fields, 10-100 in 20 percent, about 100 in one field; Hutchinson and Moore averaged 10-15 per 6 to 8-inch plant; Pecos light in isolated fields, 10-30 percent of plants in infested fields with 1-3 small colonies of 5-25 greenbugs per plant. (Boring et al.). OKLAHOMA - Counts by county week ending July 2: Texas and Beaver light, 0-6 per sorghum plant;

Major light to heavy, Grant 1-300 per row foot; Payne averaged 50 per plant; Craig heavy; and Caddo and Washita heavy in isolated fields; southwest 0-15 per plant; Greer up to 500 per row foot in some fields; and McCurtain very light. Current counts by county: Texas increased on sorghum, 0-195 per plant; Washita and Kiowa moderate; Jackson, Harmon, Greer, and Tillman light. (OK Coop. Sur.).

KANSAS - Greenbug counts on sorghum by district week of July 2: Southwest significant in larger early planted fields, heaviest (140 per plant) on 18-inch sorghum in Seward County; and southeast, south-central, east-central, and northeast none to very light. Counts of 900 per plant (increased from 440) in one early planted field in Riley County; colonies on lower 4-5 leaves, lowest 2-3 leaves significantly damaged. (Bell). NORTH DAKOTA - Adults and nymphs averaged 9 per 100 sweeps of wheat in Stutsman County. (Scholl).

POTATO LEAFHOPPER (Empoasca fabae) - IOWA - Adults and nymphs caused "hopperburn" and damage to 2 new alfalfa seedlings in Woodbury County. (IA Ins. Sur.). WISCONSIN - Counts per 100 sweeps by area: Southwest and south-central heavy on second-growth alfalfa, Dodge County up to 80; west-central lighter on alfalfa; Central Sands and west-central 2-20 on beans; and Central Sands and Spring Green 4-12 on potatoes, adults and nymphs in many fields. (WI Pest Sur.). MICHIGAN - Heavy on Ingham County alfalfa. Will cause stunting, wilting, and yellowing. (Ruppel, July 2). OHIO - Numbers fluctuated. Counts diminished and new migrants blew in. Light to moderate yellowing in some second-growth forage legume fields. Most fields very near to harvest. Adults 90-210 per 100 sweeps where surveyed in north-central and northeast areas. (Lewis). MARYLAND - Economic in some alfalfa fields in central counties; adults 6.6 per sweep with "hopperburn" in 20 acres of Baltimore County. (U. Md., Ent. Dept.). NEW YORK - Infested terminal growth of Greening and Ida Red apples in Wayne County. (Tette).

TOBACCO HORNWORM (Manduca sexta) - FLORIDA - Problem on flue-cured type tobacco around western Alachua County; infested 30 percent of 50 plants. (FL Coop. Sur.).

CORN, SORGHUM, SUGARCANE

DISEASES

COMMON SMUT (Ustilago maydis) - WISCONSIN - Galls becoming noticeable on corn throughout State, particularly in Central Sands area. Infection 30 percent in Waushara County field. Most galls associated with leaf sheaths. (WI Pest Sur.).

STEWART'S WILT (Erwinia stewartii) - PENNSYLVANIA - Destroyed up to 75 percent of susceptible corn varieties, 10 percent of moderately resistant, and none on resistant varieties. (Tetrault).

MAIZE DWARF MOSAIC VIRUS - KANSAS - In many eastern area corn fields, especially where johnsongrass present week of July 2. Percent of infection in field and sweet corn by county: Franklin trace, Leavenworth 5-60, Johnson trace to 100, Anderson trace, Wyandotte 10-50. Affected about one percent of sorghum plants in one Riley County field. (Sim).

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MISSOURI - Pupae in all corn fields in north area. Plants with leaf feeding averaged 16.9 and 5.9 percent in central area. Borers averaged 2 and 2.1 per infested plant. (Munson). IOWA - Damage to corn by first-generation larvae less severe than expected. Adults of second generation expected in 10 days. (IA Ins. Sur.). NORTH DAKOTA - Second and third-instar larvae on irrigated corn in Dickey County, 8 percent of plants infested. (Scholl). WISCONSIN - Few adults still caught in south and central area blacklight traps, and several caught in east and north areas. Larval development on corn variable in south counties. High proportion of larvae in fourth and fifth instars in west counties but majority in first and second instars in east counties. Wide variation in larval development reflects prolonged adult activity and indicates that second flight of adults likely to be prolonged. Larvae heaviest in more advanced fields. Infested 2-33 percent of advanced fields of sweet corn and field corn in central, south-central, southwest, and west-central counties. (WI Pest Sur.). OHIO - Larvae, 0.25-0.50 inch long, in north-central and northeast counties. Damaged plants averaged 10 percent. Heavily infested continuous corn field in Portage County with 48 percent feeding damage. (Lewis). PENNSYLVANIA - First-generation adult flights over. Moderate stalk and ear damage on sweet corn in Bucks, Delaware, and Chester Counties. (Tetrault). NEW HAMPSHIRE - Damage in Strafford County extensive to tassel corn at Dover and moderate in whorls of 12-inch corn at Durham. (Bowman, Burger).

FALL ARMYWORM (Spodoptera frugiperda) - FLORIDA - Damaged some late-planted field corn in Jackson County week ending July 2. (FL Coop. Sur.). ARKANSAS - Light in grain sorghum at Savoy, Washington County. Feeding on 50 percent of plants in Lonoke County. Infestations to continue and possibly increase in young sorghum; treatments seldom needed. (Boyer). OKLAHOMA - Currently light in whorls of grain sorghum in several southwest counties and in Wagoner County. (OK Coop. Sur.). ILLINOIS - Larvae infested 100 percent of Lawrence County corn field. (IL Ins. Rpt.).

STALK BORER (Papaipema nebris) - OHIO - Larvae up to 5 per stalk in Erie County June 30. Current damage to corn at field perimeters common but infestations isolated and spotty. (Lewis, James). MARYLAND - Full-grown larvae light on 3-foot no-till corn in north-central counties; some yield loss expected. (U. Md., Ent. Dept.).

CORN ROOTWORMS (Diabrotica spp.) - SOUTH DAKOTA - Larval damage peaked in most areas. Adults in several corn fields June 30, about 7 days ahead of schedule. (Kantack). MISSOURI - WESTERN CORN ROOTWORM (D. virgifera) larvae averaged 4.5 and 10, and pupae 0-18 per 10 feet of row in central area. (Munson). IOWA - First Diabrotica spp. adults of year in Ida County on field corn. (IA Ins. Sur.). ILLINOIS - NORTHERN CORN ROOTWORM (D. longicornis) and D. virgifera adult emergence well underway in central area and beginning in north area. Counts per 20 corn plants by county: Warren D. virgifera 10 in one field, and 9 with 3 D. longicornis in second field; Hancock D. virgifera 20 in one field. (IL Ins. Rpt.). WISCONSIN - First D. longicornis adults near Arlington, Columbia County, July 1; D. virgifera adults July 6 in Dane County.

Diabrotica virgifera lodging damage severe in untreated Dane County sweet corn planting, and damage apparent in Lincoln County field in continuous corn. Egg counts last fall and limited observations of larvae this summer in treated and untreated fields indicate adults may be heavy in many corn fields in August. (WI Pest Sur.). OHIO - First D. longicornis pupa of season July 1 in Wayne County; counts averaged 2 eggs and 3 larvae per plant in late-planted corn and 17 eggs and 9 larvae per plant in early planted plots. (Szatmari-Goodman).

CHINCH BUG (Blissus leucopterus leucopterus) - KANSAS - Heavy in 80-90 percent of sorghum fields bordering wheat along State Highway 9 from Marshall County line west to Junction Kansas 15W, 10-200 border rows destroyed week of July 2. Many fields partly replanted. Controls usually not satisfactory. Infestations destroyed about 8 border rows in northeast Sedgwick County sorghum field. (Bell).

SMALL GRAINS

INSECTS

HESSIAN FLY (Mayetiola destructor) - OKLAHOMA - Infested 18 of 32 wheat fields in Garvin County; infested average of 5.5 percent of stems and averaged 2.6 "flaxseed" per infested stem. (OK Coop. Sur.).

WHEAT STEM MAGGOT (Meromyza americana) - NORTH DAKOTA - More prevalent in wheat fields. Damaged 1-2 percent of fields in Stutsman and La Moure Counties. (Scholl).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Economic on Coastal bermudagrass in Columbia County week ending July 2. (Barlow). MISSOURI - Heavy on 6-inch hay sudangrass in south-central area; damage severe. (Munson).

A PYRALID MOTH (Surattha indentella) - OKLAHOMA - Heavy numbers infested buffalograss lawns in area west of Mangum, Greer County. Collected by K. Anderson, July 7, 1976. Determined by D.C. Arnold. This is a new county record. (OK Coop. Sur.).

A SOD WEBWORM (Crambus trisectus) - MARYLAND - Increased statewide, light on 400 acres (fewer than one per square foot) and preventive controls applied to 100 acres in Montgomery County. Rapid increase expected next 14 days. (U. Md., Ent. Dept.).

A SCARAB (Ataenius spretulus) - MARYLAND - Fully grown grubs moderate, 12-20 per square foot, in collars and greens of 7 golf courses in Montgomery and Prince Georges Counties and the District of Columbia; controls applied. Light on annual and Kentucky blue-grasses in home lawns at Rockville, Montgomery County. First time a problem in home lawns in State. (U. Md., Ent. Dept.). OHIO - Adults have begun to emerge and all stages present in turf. Percent development by county: Hamilton eggs 3, larvae 90, and pupae 7; Clermont pupae 75 and adults 25. Adult activity limited to upper inch of soil. (Wegner).

EUROPEAN CHAFER (Amphimallon majalis) - MASSACHUSETTS - Adults now flying during evening in Middlesex County. (Garland).

A GRASS BUG (Labops utahensis) - UTAH - Moderate discoloration of giant ryegrass in some Franklin Basin areas, Cache County. L. hesperius and Irbisia spp. present. (Knowlton).

MEADOW PLANT BUG (Leptopterna dolabrata) - WASHINGTON - Caused 78 percent "white top" in bluegrass seed fields not burned in 1975 near Spokane, Spokane County. (Oetting, June 30).

FORAGE LEGUMES

INSECTS

ALFALFA WEEVIL (Hypera postica) - NEVADA - Averages per sweep by county: Esmeralda 5-6 small, late-hatched larvae on hay alfalfa in Fish Lake Valley; Humboldt 1-2 first and second-instar larvae in several seed alfalfa fields at Orovada. (Journigan, Lauderdale). UTAH - Damage moderate to Millard County alfalfa. (Jones). NEW MEXICO - Adults 3-8 and larvae 2-6 per 25 sweeps on second-growth alfalfa at Albuquerque and South Valley, Bernalillo County. (NM Coop. Rpt.). PENNSYLVANIA - Adults 1.5 per square foot of uncut alfalfa and 0.5 in cut alfalfa at Rock Springs, Centre County, week of June 28. (Dorsey et al.).

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) - MARYLAND - Light on second-growth alfalfa near White House, Baltimore County, June 30, 1976. Collected by J. Neal and J. Elgin. Determined by J. Neal. This is a new county record. (U. Md., Ent. Dept.). PENNSYLVANIA - Adults 62 per 10 sweeps on second-growth alfalfa, mines averaged 27 per stem. (Shetlar). Adults 15 and 35-50 per 10 sweeps in 2 Lackawanna County fields. (Sporer). NEW HAMPSHIRE - Adults heavy on alfalfa at Madbury, Strafford County. Averaged 30 per 10 sweeps in 2 fields. (Burger).

BLUE ALFALFA APHID (Acyrtosiphon kondoi) - NEVADA - A. kondoi, mostly, and PEA APHID (A. pisum) 100-400 (averaged 300) per sweep of hay alfalfa in Fish Lake Valley, Esmeralda County. Plant damage evident in fields with short second growth; honeydew prevalent. (Beldon et al.).

SOYBEANS

INSECTS

ASIATIC GARDEN BEETLE (Maladera castanea) - MARYLAND - Heavy in Eastern Shore counties. Some soybean damage. (U. Md., Ent. Dept.).

A JAPANESE WEEVIL (Calomycterus setarius) - IOWA - Adult damage extensive to soybean leaves along fence rows in Harrison and Ida Counties. (IA Ins. Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - TENNESSEE - Adults in most soybean fields in south area week ending July 2. Population increase expected. (Cagle et al.).

PEANUTS

INSECTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Larvae killed large spots of peanut field checked in Beckham County. First report of year. (OK Coop. Sur.).

GRANULATE CUTWORM (Feltia subterranea) - GEORGIA - Larvae up to 5 per foot of row in several fields across peanut belt week ending July 3. (Womack).

BEE T ARMYWORM (Spodoptera exigua) - FLORIDA - Light in many peanut fields at Malone, Jackson County, week ending July 2. (FL Coop. Sur.).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Current percent of punctured cotton squares by county: Washita and Kiowa 80 in fields with quarter-grown squares in several creek bottom areas checked, Jackson 0-24, and Greer 0-4. Pheromone trap counts by county: Washita and Caddo 104 in 32 traps, Harmon 31 in 34 traps, Jackson 3 in 7 traps, Greer 7 in 8 traps, and Kiowa 10 in 15 traps. (OK Coop. Sur.). ALABAMA - Overwintered adult feeding and egg laying in squares light at 2-10 percent in most of 25 cotton fields in Lamar, Fayette, Tuscaloosa and Bibb Counties. First generation will emerge in most fields July 24 through August 5, later than normal by 14-21 days. One 75-acre field in Tuscaloosa County in blooming stage with 10 percent square infestation will develop heavy "hatch-out" by July 12; economic damage should occur unless controls applied. Age of cotton varied widely. Noticeable that most overwintered weevils moved to oldest cotton. "Hatch-outs" in older field in south area. (Lumpkin et al.). GEORGIA - Adults 9 in 24 pheromone traps in Dodge County week ending July 3, indicates end of overwintered adult emergence in south half of State. Damaged up to 50+ percent of squares in cotton fields. Infestations seem lighter than in recent years. (Lambert). SOUTH CAROLINA - Cotton infestations in several areas of Sumter County averaged 7-12 percent with highs of 16-18 percent. (Griffith).

BOLLWORMS (Heliothis spp.) - ALABAMA - Adult flights and egg laying decreased on cotton. Eggs per 100 terminals generally 3-10 and 10-25 in few fields. (McQueen). OKLAHOMA - BOLLWORM (H. zea) counts by county: Jackson eggs 0-20 and larvae 0-9 per 100 cotton terminals, and Grady eggs light. (OK Coop. Sur.).

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) - TEXAS - Counts per 100 cotton terminals by county week ending July 2: Hale light in one field; Fisher, Hardeman, Jones, and Knox increased 0-8; south-central increasing rapidly in many fields; and El Paso, Hudspeth, Pecos, Reeves, Martin, and Howard 1-10. (Latham et al.). OKLAHOMA - Counts per 100 cotton terminals by county: Jackson, Kiowa, and Greer 0-11; and Tillman 0-6. Most early planted fields treated. (OK Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - ALABAMA - Adults and nymphs still very heavy on hosts around cotton and other fields in central and north areas. Adults and nymphs in west area 2-45 per 100 feet of row with mean average of less than 10, below economic levels. GEORGIA - Moderate to heavy in north half of State week ending July 3. Few fields required treatment. Counts of 7,000 adults and nymphs per acre. (Lambert).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - ALABAMA - Damaged several fields of cotton in Fayette County and many fields in all counties of Tennessee Valley in north area. Controls difficult. Some cotton defoliated. (Sandy et al.).

TOBACCO

INSECTS

BUDWORMS (Heliothis spp.) - TENNESSEE - Of 22 tobacco fields in Trousdale, Smith, Sumner, and Macon Counties, 16 at or above control levels week ending July 2 and currently, 10 fields at or above control levels. Currently 0-454 per acre based on one percent plant sample. (Gregory).

HORNWORMS (Manduca spp.) - TENNESSEE - Of 22 tobacco fields in Trousdale, Smith, Sumner, and Macon Counties, 10 at or above control levels week ending July 2. (Gregory).

LUBBER GRASSHOPPER (Brachystola magna) - TENNESSEE - Nymphs in some tobacco fields week ending July 2. Damage heavy on infested stalks. Other grasshopper species noted; populations increasing. (Gregory).

POTATOES, TOMATOES, PEPPERS

DISEASES

SOUTHERN BLIGHT (Sclerotium rolfsii) - TENNESSEE - Losses in tomatoes heavy in central area week ending July 2. Damage most severe in unstaked fields. (Sauve, Kelly).

INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - PENNSYLVANIA - Heavy in some fields of potatoes and eggplants. Recommended controls not effective. (Tetrault). RHODE ISLAND - Severe problems in gardens and commercial potato fields in spite of serious control efforts in Washington and Providence Counties. (Partyka et al.).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - ALABAMA - Damaging numbers developed in commercial tomato field at Chandler Mountain, St. Clair County. (Smith).

BEANS AND PEAS

DISEASES

PEA BACTERIAL BLIGHT (Pseudomonas pisi) - WISCONSIN - Infected several pea fields in Langlade County. Leaves and vines locally heavily infected. (WI Pest Sur.).

INSECTS

PEA APHID (Acyrtosiphon pisum) - WISCONSIN - Ranged 2-145 per sweep of peas in southwest, south-central, and east-central counties and Central Sands. Heavy in Dodge County, many counts of 12-25 per sweep. Lightest in southwest counties. Large proportion of population consisted of nymphs where counts heavy. (WI Pest Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - UTAH - Damaged bean foliage at Logan and Providence, Cache County. (Roberts, Knowlton).

CUCURBITS

INSECTS

STRIPED CUCUMBER BEETLE (Acalymma vittata) - WISCONSIN - Heavy in cucurbit field at Brodhead, Green County; many plants killed. Light in Columbia and Portage Counties. Problems in many counties. (WI Pest Sur.).

DETECTION

NEW STATE RECORD

INSECTS

AZALEA LACE BUG (Stephanitis pyrioides) - HAWAII - Oahu Island. (p. 422).

NEW COUNTY RECORDS

INSECTS

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) - MARYLAND - Baltimore (p. 413).

A CIMICID BUG (Hesperocimex coloradensis) - NEVADA - Douglas (p. 420).

A MYMARID WASP (Anaphes flavipes) - PENNSYLVANIA - Allegheny, Berks, Butler, Greene, Lackawanna, Lebanon, Lehigh, Wayne, Washington (p. 420).

A PYRALID MOTH (Surattha indentella) - OKLAHOMA - Greer (p. 412).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NORTH DAKOTA - Stutsman, Barnes (p. 418).

CORRECTIONS

CPPR 1(26):370 - MORMON CRICKET (Anabrus simplex) - IDAHO - See page 421-422.

DECIDUOUS FRUITS AND NUTS

DISEASES

FIRE BLIGHT (Erwinia amylovora) - WISCONSIN - Severe infection on some orchard and ornamental fruit trees in Marinette, Lincoln, and Calumet Counties. (WI Pest Sur.).

APPLE SCAB (Venturia inaequalis) - WISCONSIN - Locally heavy infections on fruit and ornamental apple trees in Trempealeau, Outagamie, and La Crosse Counties. (WI Pest Sur.).

BACTERIAL LEAF SPOT (Xanthomonas pruni) - RHODE ISLAND - Problems on landscape peach and cherry trees widespread. Many more complaints than in 1975 in Washington County. (Wallace).

INSECTS

APPLE MAGGOT (Rhagoletis pomonella) - RHODE ISLAND - Adults laid eggs in commercial fruit orchards in Providence County. (King).

REDBANDED LEAFROLLER (Argyrotaenia velutinana) - MASSACHUSETTS - Second generation hatched in west Hampden County apple orchards; adults increasing. (Wilder).

PEAR SAWFLY (Caliroa cerasi) - NEVADA - Heavily damaged cherry and pear trees in yards at Reno and Sparks, Washoe County, and at Fallon, Churchill County. (Lauderdale et al.).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - GEORGIA - Second generation of males and females beginning to set up on twigs of old peach trees in Peach County week ending July 3. (Yonce).

PEARLEAF BLISTER MITE (Phytoptus pyri) - UTAH - Severely damaged apple foliage in home orchard at Logan, Cache County. (Roberts).

PECAN PHYLLOXERA (Phylloxera devastatrix) - TEXAS - Moderate to heavy on pecan trees in Wichita and Young Counties week ending July 2. (Boring).

SMALL FRUITS

DISEASES

BLACK ROT (Guignardia bidwelli) - TENNESSEE - Most of berries on untreated Davidson County grape vines rotting week ending July 2. (Sauve, Kelly).

INSECTS

BLUEBERRY MAGGOT (Rhagoletis mendax) - NEW JERSEY - Peaked on blueberries. Fly catches in abandoned field very heavy, 413 on 5 traps. Very light, 8 per 5 traps, in cultivated fields. Beginning to migrate into fields from wild areas. (Ins.-Dis. Newsltr.).
MASSACHUSETTS - Adults appeared, averaged 5 per sticky trap, at Wareham, Plymouth County. (Tomlinson).

ORNAMENTALS

INSECTS

BAGWORM (Thyridopteryx ephemeraeformis) - ARKANSAS - Heavy on junipers at Fayetteville, Washington County. Treatments applied. (Boyer). WEST VIRGINIA - Larvae severely damaged ornamental juniper and arborvitae in Kanawha County. (Hacker, June 30).

BLACK VINE WEEVIL (Otiorhynchus sulcatus) - OHIO - Adults very heavy, averaged 6 per plant, on 12-inch Taxus plants in nursery in Lake County July 2. (Dunlap).

FOREST AND SHADE TREES

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - MICHIGAN - Crown infections very noticeable on many elm trees; tree removal underway in most cities. Disease incidence appears slightly increased over 1975. (Laemmlen, July 2).

INSECTS

SPRUCE BUDWORM (Christoneura fumiferana) - MONTANA - Continued problem on ornamental trees statewide. (Jensen). WISCONSIN - Emergence 90 percent completed July 8 in Oneida and Forest Counties; adults active. (WI Pest Sur.).

AN OLETHREUTID MOTH (Rhyacionia spp. complex) - NEW MEXICO - Damage to ornamental ponderosa pines in Curry and Roosevelt Counties continued. Damage heavy to recently planted pines at Lovington, Lea County. (NM Coop. Rpt.).

NORTHERN PINE WEEVIL (Pissodes approximatus) - OHIO - Adult emergence progressing rapidly, heavy in northeast area. (Balderston).

MIMOSA WEBWORM (Homadaula anisocentra) - OHIO - First larvae July 6 in Wayne County. First and second-instar larvae on nursery planting of about 1,000 thornless honeylocust trees 8-15 feet tall. Browned leaflets just appearing. Unusually large number of webs for time of year, 5-30 per tree. (Kelly).

A TORTRICID MOTH (Croesia semipurpurana) - PENNSYLVANIA - Larvae on red oak north of Karthaus, Clearfield County. Defoliation heavy on oaks comprising 25 percent of stand on 15 acres. (Quimby).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NORTH DAKOTA - Adults taken from attractant traps at Jamestown, Stutsman County, and Valley City, Barnes County, June 21, 1976. Collected by C.G. Scholl. Determined by R. Carlson. These are new county records. (Carlson, Scholl).

ELM LEAF BEETLE (Pyrrhalta luteola) - UTAH - More serious than normal on Millard County elms. (Jones). NEVADA - Damage to elms increased at Las Vegas, Clark County; current damage most severe since first detected in county in 1965. (Zoller). NEW MEXICO - Eggs, fully grown larvae, and pupae on Siberian elms in Bernalillo

County; defoliation 75-95 percent. All stages active in Dona Ana County, range expanded additional 5 miles this season. (NM Coop. Rpt.).

OBSCURE SCALE (Melanaspis obscura) - PENNSYLVANIA - Adults and eggs on pin oak at Altoona, Blair County. Very heavy on ten, 15-foot trees with 3 almost dead. (Henry, Dinsmore). Eggs and crawlers on scarlet oak at Harrisburg, Dauphin County. Moderate to heavy on six, 15-foot trees. (McIntosh).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - UTAH - Problem for Millard County herds. Most conspicuous problem on reservation in San Juan County. (Cox, Jones). COLORADO - Adults 20-175 (averaged 60) per side of untreated cattle in 14 Weld County pastures. (Hantsbarger). OKLAHOMA - Ranged 600-800 per head on Major County cattle week ending July 2. (OK Coop. Sur.). TEXAS - Counts on cattle by county week ending July 2: Knox, Llano, Gillespie, McCulloch, and Coke heavy; Crocket, Brewster, Jeff Davis, Pecos, and Terrell moderate to heavy; Howard, Reeves, Ward, El Paso, and Brewster moderate; Mitchell, Coleman, Concho, Nolan, Sterling, and Taylor light to moderate; Blacklands general increase up to 1,000 per head; Panhandle increased. (Neeb et al.). MISSOURI - Averages per animal in 2 herds by area: North-central 250 and west-central 300. (Munson). WISCONSIN - Averaged about 50 per side on dairy heifers at one Green County sale barn. Temperatures of 90+ degrees magnified stress. (WI Pest Sur.). ILLINOIS - Averaged 282 per animal (pastured cattle) in central area and 194 in north area. (IL Ins. Rpt.).

FACE FLY (Musca autumnalis) - OKLAHOMA - Averaged 20 per face on Rogers County cattle week ending July 2. Moderate in Craig County. (OK Coop. Sur.). MISSOURI - Averages per head 16.5 in 2 north-central area herds and 19 in 2 west-central herds. (Munson). ILLINOIS - Averages per animal (pastured cattle) 20 in central area and 8 in north area. (IL Ins. Rpt.). TENNESSEE - Heavier than normal in many west areas week ending July 2. (Locke). RHODE ISLAND - Heavier than in 1975 on dairy cattle and riding horses in Newport County. (Chaves).

STABLE FLY (Stomoxys calcitrans) - NORTH DAKOTA - Ranged 10-60 per animal on 12 steers in Burleigh County. (Brandvik). WISCONSIN - Severe to cattle in portions of Jefferson County. Temperatures of 90+ degrees magnified stress. (WI Pest Sur.). ILLINOIS - Averages per animal (pastured cattle) 6 in central area and 3.2 in north area. (IL Ins. Rpt.).

MOSQUITOES - WISCONSIN - Major pests of cattle in Chippewa and Brown Counties. Temperatures of 90+ degrees magnified stress. (WI Pest Sur.). MASSACHUSETTS - Most common adult species collected in Hampshire County: Coquillettidia perturbans and Aedes canadensis. Anopheles punctipennis continued to increase. Aedes excrucians, A. cinereus, and Culex spp. continued moderate. (Arnott). In Middlesex County spring hatch still present. Coquillettidia perturbans worse than usual the last 2 years. Aedes triseriatus increasing in east area. (Armstrong).

A BLACK FLY (Simulium vittatum) - NEW HAMPSHIRE - Larvae heavy (about 5 per square centimeter) on cement spillway at outlet of Nottingham Lake in Rockingham County. S. verecundum and S. tuberosum larvae heavy on trailing vegetation at same site. (Burger).

A CIMICID BUG (Hesperocimex coloradensis) - NEVADA - Infested bedroom and bit individuals in home at Genoa, Douglas County. Collected by V.J. Sumner, July 3, 1976. Determined by R.C. Bechtel. This is a new county record. (Bechtel).

AMERICAN DOG TICK (Dermacentor variabilis) - WISCONSIN - Decreased to light counts statewide. (WI Pest Sur.).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

A MYMARID WASP (Anaphes flavipes) - PENNSYLVANIA - Adults recovered from Oulema melanopus (cereal leaf beetle) eggs collected from oats by county (and township): Allegheny (Findley) June 23, 1976; Berks (Bethel) June 22; Butler (Jackson) June 23; Greene (Center) June 23; Lackawanna (Clarks Summit) June 22; Lebanon (Cornwall) June 22; Lehigh (Lynn) June 22; Wayne (Canaan) June 23; Washington (South Franklin) June 23; Washington (Falls) June 22. All collected by R. Dysart and Bingham (no initials given). All determined by R. Dysart. These are new county records. (Kim).

A BRACONID WASP (Microctonus aethiopoides) - OHIO - New Hypera postica (alfalfa weevil) adults collected in northwest area, hormone treated, and held in lab for parasite emergence. Percent parasitism (and date of collection) by county: Hancock 15 (June 22), Wood 20 (June 22) and Wyandot 16 (June 11). (Flessel).

FEDERAL AND STATE PROGRAMS

INSECTS

CEREAL LEAF BEETLE (Oulema melanopus) - OHIO - Adult damage severe (white plants) in Wayne County on corn plants adjacent to uncut wheat field. Adults at edge of corn field averaged 245 per 100 sweeps and 366 at 35 rows into field; infestation averaged 19 per plant. Similar in Portage County corn field where feeding damage moderate and adults averaged 6 per plant. (Szatmari-Goodman).

CITRUS BLACKFLY (Aleurocanthus woglumi) - FLORIDA - Infestation, centered at Ft. Lauderdale, Broward County, slowly spreading. Most of Broward County brought into regulated zone. Several new infestations outside regulated zone within recent weeks, both north and south of former lines, with Palm Beach County infestations reaching to northern Boca Raton. Primary hosts have been dooryard citrus. At least 135 nurseries and/or environs infested; these placed under quarantines and spray schedules begun. (FL Coop. Sur.).

GRASSHOPPERS - MONTANA - Significant populations on rangeland in Treasure County. Control programs pending. Heavy in Chouteau County, mostly Melanoplus bivittatus 25-35 per square yard in

pasture and mostly Aulocara elliotti 15-20 per square yard on range. (Bain). OREGON - Aulocara elliotti, mostly, and Ageneotettix deorum, Trimerotropis sp., and Cratypedes sp. mortality of 90-95 percent; about 3,500 acres of Bureau of Land Management rangeland northeast of Adel, Lake County, treated. Mostly Melanoplus spp. economic on 2,000 acres in Imnaha Canyon, Wallowa County. (Goeden). TEXAS - Damaged pastureland in parts of Kent County. (Boring). SOUTH DAKOTA - Counts per square yard up to 40 on roadsides and 25 on small grain and corn near Conde, Spink County. Main species M. bivittatus with 90 percent adults. (Kantack).

GYPSY MOTH (Lymantria dispar) - PENNSYLVANIA - Early fourth-instar larvae light at Reels Corners, Somerset County, June 30. Pupation well underway in Sugar Valley, Walker Township, Centre County, with 2 males to one female. Adults emerged at Klienfelder, Lancaster County, week of June 28; defoliation 70-100 percent. Defoliation 100 percent at Tylersville, Clinton County. Pupae on red oak at Howard, Centre County, June 23; damage 10 percent with 6 larvae per trap. Pupae in Centre and Snyder Counties June 25. (Cameron et al.). NEW YORK - Larval "hotspots" on Monroe County oaks. Infestations seem to be moving into new areas. (Personius). RHODE ISLAND - Pupation general in Providence County. (LaFrance).

JAPANESE BEETLE (Popillia japonica) - OHIO - Increasingly common as adult emergence progresses. Light counts feeding in central and north areas. Damage to plum foliage in Franklin County averaged 10 percent loss of new leaf growth as of July 4. (Lewis, Albrecht). SOUTH CAROLINA - Fed on corn silks in Oconee, Spartanburg, York, and Chester Counties. (Douglass). VIRGINIA - Emergence heavy in Montgomery County during July 4 weekend for second consecutive year. Damage lighter than in past years. Adult emergence heavy in Westmoreland County last week in June. Moderate in City of Chesapeake. (Allen). MARYLAND - Heavy statewide with 40-50 percent of corn silks infested in some sweet corn fields in Eastern Shore counties. (U. Md., Ent. Dept.). PENNSYLVANIA - Adults feeding on rose, maple, grape, and other plants in Centre County. (Shetlar).

NEW JERSEY - Adults generally heavier than in recent years on ornamentals. (Ins.-Dis. Newsltr.). RHODE ISLAND - Rapid population buildup in many different parts of State. Complaints heaviest from suburban homeowners in Newport, Washington, Kent, and Providence Counties. (King et al.). MASSACHUSETTS - Adults very heavy statewide except at Cape Cod; skeletonizing severe. (Garland). NEW HAMPSHIRE - Very heavy in lawns, on vegetation, and feeding on grapes in south area. Adults, 5-10 per square foot, emerged from lawns at Dover, Strafford County. (Burger).

MEXICAN BEAN BEETLE (Epilachna varivestis) - IDAHO - Eggs and adults on beans in several gardens, damage light, at Boise, Ada County. (Saunders).

MORMON CRICKET (Anabrus simplex) - OREGON - Distribution general throughout Imnaha Canyon, Wallowa County. (Goeden). NEVADA - Rapidly moving bands in Pine Valley area, Eureka County, and in Red Rock and Porter Ranch areas, Elko County. Baits and sprays applied. (Bechtel). IDAHO - Outbreaks did not occur in State as

reported in CPPR 1(26):370. All infestations scattered and light, and none heavy enough to treat. (PPQ). Current counts of 70 per mile of road north of Glenns Ferry, Elmore County, near Little Canyon Creek. (Clark).

RANGE CATERPILLAR (Hemileuca oliviae) - OKLAHOMA - Larvae light on range grasses in small area one mile east and 6 miles north of Wheelless, Cimarron County. Collected by J.L. Gullett, June 29, 1976. Determined by S. Coppock. Adults reported in State by C.N. Ainslie in 1910 but this appears to be first report of larvae in State. (OK Coop. Sur.).

HAWAII PEST REPORT

New State Record - AZALEA LACE BUG (Stephanitis pyrioides) reported from azalea at Manoa, Oahu, by F.H. Haramoto, June 8, 1976. Determined by R.C. Froeschner. Preliminary surveys of ornamental azalea showed infestations in upper and lower Manoa Valley and Punahou, Oahu. (Chun et al.).

General Vegetables - Infestations (30-50 percent of leaves heavily mined) and damage by LEAFMINER FLIES (Liriomyza spp.) moderate on 0.5 acre of green onions at Lualualei and on 0.25 acre each of eggplant and Chinese cabbage at Pearl City, Oahu. Counts and damage light on 2 acres of bulb onion at Kula, Maui, and on 2 acres of lettuce (older leaves mined on 50 percent of plants at Lualualei, 0.5 acre each of tomato at Pearl City, and of togan at Waianae and Pearl City, Oahu. All stages of a PLANT BUG (Cyrtopeltis modestus) moderate to heavy on tomato stems in yard plantings at Ewa and Waianae, Oahu. Damage light. (Miyahira, L. Nakahara).

Fruits and Nuts - CARMINE SPIDER MITE (Tetranychus cinnabarinus) counts and foliar damage heavy on 15 acres of papaya at Pulehu, Maui. Light on 2,000 square feet of yard-long beans at Waianae, 0.25 acre of bittermelon and one acre of eggplant at Pearl City, and 7 acres of roses at Honouliuli and Waianae, Oahu. (Ah Sam et al.). CITRUS SWALLOWTAIL (Papilio xuthus) infestations light to moderate (75 percent of eggs parasitized) and terminal damage light to moderate on yard citrus at Spreckelsville and Kahului, Maui. (Miyahira).

Beneficial Insects - SOUTH AFRICAN EMEX WEEVIL (Apion antiquum) infestations and damage heavy on scattered roadside growths of emex at Waiakoa, Maui. (Miyahira).

LIGHT TRAP COLLECTIONS

LIGHT TRAP COLLECTIONS					
	Temperature Air °F.	Precip- itation Type of trap	Type of trap	Air °F. at time of capture	Number of specimens
CALIFORNIA	54-90	BL	BL	28	1
Clements 6/29	65-106	BL	BL	28	1
Stockton 6/28		2BL	BL	16	3
FLORIDA	Gainesville 7/2-8	INDIANA (Counties)	Randolph 6/25-7/1	Vanderburgh 6/25-7/1	KANSAS
Rossville 7/5	Scandia 7/6	MINNESOTA	Fergus Falls 7/1-8	Worthington 7/1-8	MISSISSIPPI
Stoneville 7/2-8	Mississippi Plate 7/2-10	MISSOURI (County)	Platte 7/2-10	NEW JERSEY	
Harrisonville 6/30-7/6	Vineland 6/30-7/6	NORTH DAKOTA	Bismarck 7/1	Jamestown 6/30, 7/4	OHIO
Wooster 7/3-9	OREGON	Dever 7/1-7	St. Paul 7/1-7		

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WEATHER OF THE WEEK ENDING JULY 11

Reprinted from Weekly Weather and Crop Bulletin Supplied by National Weather Service, NOAA.

HIGHLIGHTS: Widespread warm temperatures and scattered thunder-showers spelled little change in the national weather patterns during the week. Precipitation ranged from central Texas along the gulf coast into portions of the Mississippi and Ohio Valleys. In Texas, persistent shower activity halted temperatures 20 degrees below normal. Cooler than usual weather also enveloped the Southeast, most of the Northeast, and the Pacific Northwest. Heavy rains ended the week on a storm note in the northern Ohio Valley where tornadoes, hail, and violent winds caused some damage.

TEMPERATURE AND PRECIPITATION: Slow moving frontal systems and pressure centers that dominated weekend weather patterns produced widespread warm temperatures and scattered thundershowers across the Nation on Monday. As the day progressed, showers mushroomed from Texas to the southern Atlantic coast and over the Ohio Valley, the Appalachians, and the northern New England States. Scattered rains appeared from North Dakota into Colorado and New Mexico. Survey of isolated severe weather placed a tornado southeast of Dallas, Texas, and wind gusts to 60 m.p.h. in Finley, North Dakota. In Nebraska 2-inch hail pelted an area north of Scottsbluff. Though readings in the 80's and 90's warmed most of the country, shower activity halted the mercury in the 70's in the southeast United States. Seasonal weather translated into highs in the 60's and 70's in the Pacific Northwest. The Nation's hot spot came as no surprise--Needles, California, 116 degrees. A large high pressure system pushed away clouds from the northern Midwest. Clear skies ranged from the Upper Great Lakes region across the middle Mississippi Valley and the Central Plains through most of the upper Rockies to the Pacific coast. From the northern Atlantic coast, across the Mississippi Valley to the Rockies and the Far West, Thursday's high pressure systems produced more warm dry weather over most of the Nation.

Daytime temperatures shot up rapidly under sunny skies. By noon, the mercury pushed into the 90's in New England and into the 80's across the Upper Mississippi Valley and High Plains. In the Intermountain region, the weather word was hot. Temperatures in the 80's dotted Idaho and Wyoming and vaulted 20 degrees higher in portions of Wyoming and Colorado. In the eastern half of the Nation scattered thundershowers persisted from the southern Great Lakes region, to the middle and southern Atlantic States, and along the gulf coast. Increased shower activity drew attention over the Rockies, western High Plains, the southern Plateau, and from Minnesota into Nebraska.

Forecasters spotted two tornadoes in Florida, Nebraska, Tennessee, and Wyoming, all reported isolated golf ball-size hail. Midweek reports revealed little change in the Nation's weather patterns. In the form of scattered thundershowers, most of Wednesday's precipitation edged the Gulf and Atlantic coastal area. Early in the day, the heaviest storms hit the Galveston, Texas, area on the coast and zeroed in on North Carolina along the Atlantic coast.

Readings in the upper 80's to the mid 90's created unseasonably hot conditions across the southern two-thirds of the Rockies. In the Desert Southwest, the mercury shot up to a scorching 115 degrees. "Hot" summed up Thursday's weather over most of the Rockies, eastern Oregon, northern two-thirds of the Plains, and the upper Mississippi Valley where temperatures scored in the 90 to 100 degree range. Forecasters traced summer showers and thundershowers from central Texas along the Gulf coast into Florida. Weather maps also showed thundershowers stretching from the Ohio Valley into New England and a few scattered thundershowers across North Dakota and northern Minnesota. In the gulf coast area, two tornadoes skipped across Corpus Christi, Texas, and several waterspouts turned up near Tampa, Florida.

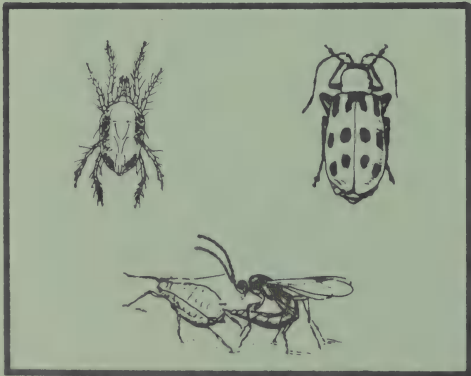
In the evening, storm activity quieted across the Nation. Temperatures of 100 degrees plus again baked portions of the Plains, central Rockies, and Upper Mississippi Valley on Friday. Some of the day's record highs, Sious Falls--106 degrees, Mason City, Iowa--101 degrees, Minneapolis, Minnesota--99 degrees, and Lander, Wyoming--97 degrees. On the cool side, the mercury slipped as much as 20 degrees below normal over the eastern half of Texas. Reason--continued thundershower activity which dumped more than 3 inches of rain in 24 hours in some places.

Though nighttime temperatures cooled somewhat, thermometers still registered in the 80's from the Midwest to the Rockies. End of day precipitation was light and scattered through the south and from the northern Plains across the Great Lakes regions. Scattered thundershowers dominated the Nation's weekend weather pattern. Strong winds, hail, and heavy rains accompanied lines of intense thunderstorms that moved across the northern portions of the Ohio Valley, eastern Ohio, and western Pennsylvania took the worst beating on Sunday, when six tornadoes touched down in the area. Cooler air moving into the northern portions of the Plains and Mississippi Valley checked daytime readings in the 70's to lower 80's. Shower activity continued to hold temperatures below normal across most of the Nation.

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Cooperative PLANT PEST REPORT



Animal
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Health
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U.S.
DEPARTMENT
OF AGRICULTURE



This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
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Hyattsville, Maryland 20782

COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

POTATO LEAFHOPPER over one per sweep in Wisconsin, Missouri, Kentucky, Indiana, Ohio, and Pennsylvania. Building up in Ohio and New York. (p. 430).

Treatments applied for EUROPEAN CORN BORER in Nebraska. Damage heavy in Ohio and New Hampshire. (pp. 431-432).

NORTHERN and WESTERN CORN ROOTWORM adults over 10 per plant in Missouri. Damage by the latter species heavy in Wisconsin and Illinois. (p. 432).

BARLEY YELLOW DWARF VIRUS heavy and widespread in late-planted oats in New York. (p. 433).

MOUNTAIN PINE BEETLE outbreak in area of Idaho. (p. 441).

FALL CANKERWORM defoliation in Ohio and Pennsylvania. (p. 441).

GRASSHOPPERS migrated from rangeland to damage fruit trees in parts of California. (pp. 443-444).

Detection

New State records include an ERIOPHYID MITE in Washington and ZIMMERMAN PINE MOTH in Texas. (p. 440).

CITRUS BLACKFLY found in new county in Florida. (p. 444).

For new county records, see page 438.

A THRIPS found on new host for Hawaii. (p. 445).

Special Reports

Exotic Pests in International Commerce (p. 448) to be published weekly.

Reports in this issue are for the week ending July 16, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ARMYWORM (Pseudaletia unipuncta) - NEW YORK - Activity declined around July 4 in Niagara County, about 4,000-6,000 acres of cereals treated. (Herendeen). IOWA - Damage moderate to corn field in Howard County. Larvae 1.25 inches long, feeding in whorl. (IA Ins. Sur.).

ASTER LEAFHOPPER (Macrosteles fascifrons) - WISCONSIN - Counts of 3 per 25 sweeps in Waushara County potato fields. Trace on potatoes at Spring Green, Sauk County. (WI Pest Sur.).

BEE T LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Heavy, up to 60 per sweep, on mustard (roadside weed) in Cuyama Valley in Kern and Santa Barbara Counties. (CA Coop. Rpt.).

CORN EARWORM (Heliothis zea) - UTAH - Heavy in blacklight trap catches at Salt Lake City International Airport, Salt Lake County. (Crowe, Knowlton). TEXAS - Larval counts by area: Blacklands very light in some sorghum fields, Ellis and Navarro Counties light in some grain sorghum fields, High Plains few in some corn fields but noneconomic, Sterling County very heavy counts damaged garden corn. (Hoelscher et al.). KANSAS - Trace in corn whorls in McPherson County week of July 9. (Bell). INDIANA - Fifth-instar larva in corn whorl in Posey County, first larva of season. (Meyer). RHODE ISLAND - Persistent problems on garden corn. Larvae fed on young ears in Kent, Washington, and Newport Counties. (Larmie et al.).

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Very heavy on sorghum at Roswell, Chaves County. (NM Coop. Rpt.). KANSAS - Generally light to moderate in sorghum whorls in east half of State week of July 9. Heavy in whorls of scattered plants in some fields in Washington, Rooks, and Marshall Counties. (Bell). ILLINOIS - Average of 20-30 percent of corn plants with new colonies in some fields in central and north-central areas. (Sur. Bull.). INDIANA - Colonies still uncommon on grain corn in north-central and southwest districts, where corn tasseling or close to it and past harm. (Anderson, Meyer). Averaged about 50 per plant in sorghum field in Parke County. (Edwards). DELAWARE - Some present in some corn in Kent and Sussex Counties week ending July 9. (Burbutis, Kelsey).

GREENBUG (Schizaphis graminum) - MONTANA - This species and ENGLISH GRAIN APHID (Macrosiphum avenae) caused concern on barley and wheat in many east and central areas. Levels still subeconomic. (Jensen). TEXAS - Counts on grain sorghum by county: Glasscock, Howard, and Reagan moderate; Pecos and Reeves moderate to heavy in isolated fields; Texas Panhandle 0-150 per 12 to 19-inch plant with "red-spotting" only damage; Collin heavy in several portions of some fields; High Plains increased; Blacklands decreased significantly; Nolan, Taylor, and Mitchell heavy; Tom Green and Callahan light; Jones and Fisher up to 300 per plant; Knox and Wichita colonies of 500-600 greenbugs per leaf in some fields. (Neeb et al.).

NEBRASKA - Greenbug counts per sorghum plant by county July 6: Clay seems stabilized at south-central station, averaged 25 in other untreated plots, resistant varieties maintaining populations without showing damage; Dixon averaged 85 on resistant varieties at northeast station, damage light on some varieties; York averaged 3 in 3 fields of 20 to 36-inch sorghum; Merrick greenbugs 35 and 77 in 2 fields of 30 and 44-inch sorghum, respectively. (Peters et al.). IOWA - Heavy enough to merit treatment in 150 acres of milo in Iowa County. (IA Ins. Sur.). OHIO - Damage to bluegrass turf still occurring at Dayton, Montgomery County. Light orange discoloration from heavy feeding reappeared. (Niemczyk).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Adults and nymphs heavy on alfalfa and vegetable crops. Counts of 5 per sweep in northwest, west-central, southwest counties and Central Sands. Large infestations in many areas. Injury will be masked by effects of drought. Counts per 25 sweeps by county: La Crosse and Trempealeau 9 on soybeans; Dunn 12 on soybeans; snap beans in Barron and lima beans in Trempealeau 1-8 nymphs and adults; Sauk 0-2 on potatoes at Spring Green; Central Sands somewhat lighter on potatoes, no nymphs. (WI Pest Sur.). MISSOURI - Nymphs and adults 14-130 per 100 sweeps of alfalfa in east-central and south-central areas. Alfalfa not recently cut, showing some yellowing. (Munson). KENTUCKY - Means on alfalfa in Warren County: One adult per sweep and 0.27 nymph per stem on 26-inch second growth, 0.3 adult per sweep and 0.3 nymph per stem on 3.5-inch third growth, 2.1 adults per sweep and 1.6 nymphs per stem on 36-inch second growth. (Scheibner).

INDIANA - Potato leafhopper nymphs increasing to economic levels on alfalfa week of July 9. Half of fields surveyed in north districts harvested or being harvested for second time, remainder treated or need treatment. (Meyer). Currently, adults and nymphs 0.5-1.5 per sweep of 8 to 12-inch alfalfa in Spencer, Warrick, and Perry Counties. Nymphs in same county 0-5 per leaf on soybeans. (Matthew). OHIO - Adults building up due to recent rains. Adult averages per 100 sweeps in east area by stage of alfalfa: Established stands, second growth 125.5, above economic threshold but will be cut soon; established stands, third growth 8.5, very light; new seedlings, second growth 49, moderate. (Lewis). PENNSYLVANIA - Adults 20 per sweep on untreated alfalfa at Rock Springs, Centre County. Damage heavy. (Istvan, Plummer). NEW YORK - Building up on second-growth alfalfa in Niagara County. (Herendeen).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEVADA - Averaged 20 per sweep on 100 acres of seed alfalfa at Lovelock, Pershing County. (Munk). MISSOURI - Light, 8 per 10 sweeps, on one south-central alfalfa field. (Munson). WISCONSIN - Continually found along with PEA APHID (Acyrtosiphon pisum) on alfalfa in south-central, southwest, west-central, and central counties. Ranged 10-60 per sweep in central counties and 10-40 in southwest. (WI Pest Sur.).

TOBACCO BUDWORM (Heliothis virescens) - FLORIDA - Increased on sucker growth of tobacco; no appreciable increase on harvestable leaves. Increased to 23.7 percent by July 7 because of unusual sucker growth on untreated tobacco at Live Oak, Suwannee County. (FL Coop. Sur.). MARYLAND - Damage light in some tobacco fields in Charles and St. Marys Counties. Larvae 13 per 100 plants on 2-acre untreated plot at research farm. (U. Md., Ent. Dept.).

TOBACCO HORNWORM (*Manduca sexta*) - FLORIDA - Heavy enough on 23 acres of tobacco south of Chiefland, Levy County, to require weekly treatments. Decreased, infested 33 percent of untreated tobacco at Live Oak, Suwannee County, by July 7. (FL Coop. Sur.). NORTH CAROLINA - Tobacco fields at threshold in 8 fields week ending July 9 and currently in 23 fields out of 193 Bladen County fields. Heaviest infestations 25 percent previous period and 10 percent currently. Controls good. (Kirby, Reagan).

TOMATO HORNWORM (*Manduca quinquemaculata*) - INDIANA - First adult of season collected in blacklight trap July 6 in Lagrange County and July 10 in Tippecanoe County. (Sillings). Full-grown larva collected in Jackson County and eggs in Tippecanoe County on tomatoes. (York).

CORN, SORGHUM, SUGARCANE

DISEASES

MAIZE DWARF MOSAIC VIRUS - NEW MEXICO - Symptoms light to moderate in sorghum near Roswell, Chaves County, after recent rains. (NM Coop. Rpt.). KANSAS - Percent of infected corn by county week of July 9: Rice trace, Rooks 80, Osborne 50. Trace in few sorghum fields in McPherson and Shawnee Counties. (Sim).

INSECTS

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEBRASKA - Treatments applied to 7 fields of popcorn and one of field corn in Antelope and Pierce Counties week ending July 9. Infestations ranged 35-50 percent. Infested 0-30 percent of 4 Wheeler County fields. (Koinzan, Bush). MINNESOTA - Egg masses per 100 corn plants averaged 6 in Wilkin County and 3 in Polk and Grant Counties week of July 9. Percent larval infestations (second and third instars) by district: Southeast 18 (32 in some Wabasha and Olmsted County fields), south-central 11, southwest 5, east-central 7, west-central 6, northwest 2. Some corn 60 inches extended leaf height; corn large enough in all districts to sustain borers. Currently, pupation began in south-central district. Fifth instars increased in southeast, southwest, and central districts. Will probably have early second generation. Borers averaged 49 per 100 corn plants on 29 percent of plants in south-central district. (MN Pest Rpt.). WISCONSIN - Fresh egg masses still found on sweet corn in some Fond du Lac County fields. Heavy first flight activity continued in east and north counties. Larvae, third through fifth instar, in central, south, and west counties. Pupae appeared in Eau Claire and Spring Green areas. Leaf feeding in taller corn fields on 4-22 percent of plants; little or no feeding in many shorter fields. (WI Pest Sur.).

INDIANA - Late instar larvae and pupae of European corn borer on corn in southwest district. No significant numbers of second-generation adults. (Meyer, Sillings). OHIO - Moderate to heavy damage to corn by first-generation larvae in northeast area. Up to 90 percent damage in over half of plants in 6 fields in Wayne and Stark Counties. All-sized larvae averaged 4 per plant. All larvae in Coshocton County nearly full grown and tunneled into stalks. Averaged 30 percent damage on 7-foot plants. (Szatmari-Goodman, Lewis). MARYLAND - Light statewide, infested less than 5

percent of plants. Second brood flights underway Statewide. (U. Md., Ent. Dept.). NEW YORK - Minor damage to corn July 9 in some areas of Suffolk County. Adult emergence expected in about 7 days. (Weber). NEW HAMPSHIRE - Severely damaged small sweet corn plots throughout southeast area. Larvae boring into stalks and ears and many nearing full growth. Larvae 2-4 per plant in inadequately treated fields. (Burger).

FALL ARMYWORM (Spodoptera frugiperda) - MISSOURI - Light to moderate in late-planted corn and sorghum in south-central area. Infested 0-49 percent of plants. Whorl feeding damage 21 percent in 3 late corn fields. Infested up to 85 percent of late corn in Howell County. (Munson).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - COLORADO - Egg masses on corn in northeast area. (Hantsbarger).

CORN ROOTWORMS (Diabrotica spp.) - MINNESOTA - Adults of WESTERN CORN ROOTWORM (D. virgifera) and NORTHERN CORN ROOTWORM (D. longicornis) trace on corn in southeast, south-central, southwest, central, and west-central districts. Emergence early by at least 14 days. Lodging of 10 percent caused by mostly third instars in one field in Yellow Medicine County. (MN Pest Rpt.). WISCONSIN - Many Diabrotica spp. adults emerging as far north as St. Croix and Marathon Counties. Some adults in nearly every cornfield; some fields already with 3 per plant. Mainly D. virgifera in central and western counties and D. longicornis in east and south-central counties. Damage by county: Jackson "goosenecking" severe on 16 percent of plants in one field; Vernon roots heavily riddled in 20 percent of plants, no lodging, in one field; Wood and Juneau severe in some fields. (WI Pest Sur.).

IOWA - Diabrotica spp. damaged treated field corn in Clinton and Clayton Counties. Late-instar larvae 3-4 per plant. (IA Ins. Sur.). MISSOURI - D. longicornis and D. virgifera adults 0-31 per 10 corn plants in east-central area. Mostly D. virgifera 0-26 per 10 plants in south-central area. Up to T5 per plant in northeast area. (Munson). ILLINOIS - D. virgifera adults heavy in some fields in corn 2 or more years in central and north areas. Heavy as far south as Christian County. Fed on pollen, silks, and skeletonized leaves. (Sur. Bull.). INDIANA - D. longicornis adults, averaged 1.5 per cornstalk, completely clipped few silks that had appeared in Bartholomew County field. (Meyer). INDIANA - D. virgifera adults numerous on Clinton County corn. No silk feeding. (Anderson). OHIO - First D. longicornis adult July 12 on corn in Wayne County. Pupation well underway as of July 8. (Casey et al.).

SORGHUM MIDGE (Contarinia sorghicola) - FLORIDA - Heavy on untreated sorghum in experimental plots at Quincy, Gadsden County, July 9. (FL Coop. Sur.). ARKANSAS - Light in some sorghum just beginning to bloom. (Boyer). TEXAS - Counts per grain sorghum head by county: Tom Green, Runnels, Taylor, and Coleman light; Blacklands very heavy, 10-30 in fields still blooming; Ellis and Navarro up to 8 in some heads; Hunt and Collin Counties 2-4 midges in several heads; south-central still increasing, 5-10 found; Jones and Fisher emerging; Wichita light. (Wilson et al.).

SMALL GRAINS

DISEASES

BARLEY YELLOW DWARF VIRUS - NEW YORK - Incidence in late-planted oats very heavy, often 100 percent infection in Chautauqua, Cattaraugus, Wyoming, Erie, Ontario, Seneca, Cayuga, Allegany, Jefferson, Oneida, Onondaga, Orleans, Genesee, and Livingston Counties week ending July 12. List of infected counties increasing. Most fields will suffer very serious yield losses. (NY Wkly. Rpt.).

INSECTS

WHEAT STEM MAGGOT (Meromyza americana) - MONTANA - Larvae in wheat fields heavier than usual in one area. Causing concern in some parts of Richland County. (Jensen).

TURF, PASTURES, RANGELAND

DISEASES

PIRICULARIA LEAF SPOT (Piricularia grisea) - TENNESSEE - Heavy on St. Augustinegrass and millet in Central area. (Kelly).

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Still economic in pastures and hay crops in south area; controls applied. (Boyer).

GRASSHOPPERS (Melanoplus spp.) - MISSOURI - Heavy, up to 75 per square yard, in south-central area pastures. (Huggans).

A SCARAB (Ataenius spretulus) - WEST VIRGINIA - Larvae damaged 25-50 percent of several fairways on golf course in Putnam County. Averages per square foot of 46 larvae July 6 and of 18 larvae, 40 pupae, and 4 adults by July 15. (Hacker).

BLUEGRASS BILLBUG (Sphenophorus parvulus) - OHIO - Larval average per square foot: 51 in untreated test plots in Franklin County and 65 in Wayne County as of July 15. (Niemczyk).

FORAGE LEGUMES

DISEASES

COMMON LEAF SPOT (Pseudopeziza medicaginis) - KANSAS - Moderately infected about 50 percent of alfalfa plants in Morris County surveyed fields and about 80 percent of plants in Reno County field week ending July 9. (Sim).

SUMMER BLACK STEM (Cercospora zebrina) - KANSAS - First find for year in Harvey County field with light symptoms in 50 percent of alfalfa plants week ending July 9. (Sim).

LEPTOSPHAERULINA LEAF SPOT (Leptosphaerulina briosiana) - KANSAS - Trace in one Morris County alfalfa field week of July 9. Affected about 90 percent of plants in Dickinson County field. (Sim).

INSECTS

ALFALFA WEEVIL (Hypera postica) - UTAH - New adults still outnumbered by adults from last year on second-growth alfalfa. (Davis, Spaid). MONTANA - This species and CLOVER LEAF WEEVIL (H. punctata) severely curtailed second-growth alfalfa in field at Glendive, Dawson County. (Jensen). INDIANA - Third and fourth instar larvae up to 3 per sweep of alfalfa in south-central district, unusually heavy for this time of year but not economic. (Moriyama).

PEA APHID (Acyrtosiphon pisum) - NEVADA - Increased to 96 per sweep on seed alfalfa at Jungo, Humboldt County, 400-500 per sweep in spotted areas. (Stitt). UTAH - Heavy in some alfalfa fields in Cache Valley, Cache County. Occasional field required control. (Burtenshaw). IOWA - Severely stunted 25 acres of alfalfa in Crawford County before several species of lady beetles eliminated population. (IA Ins. Sur.). MINNESOTA - Increased on alfalfa week of July 9. Averages per 100 sweeps by district: Southeast 139, northwest 100 (6,000 in one field), south-central 214, southwest 50 (2,000 in one field), east-central 72, west-central 360. (MN Pest Rpt.). WISCONSIN - Continued to increase on alfalfa statewide, averages of 10 per sweep common. (WI Pest Sur.).

BLUE ALFALFA APHID (Acyrtosiphon kondoi) - CALIFORNIA - Heavy in alfalfa field at Lookout, Modoc County. Collected by J. Robison, July 8, 1976. Determined by R. Gill. This is a new county record. (CA Coop. Rpt.). KANSAS - Light on alfalfa at Colby, Thomas County. Collected by T.L. Harvey, June 19, 1976. Determined by J.D. Lambley. This is a new county record. (Bell).

LYGUS BUG (Lygus sp.) - TEXAS - Heavy activity on alfalfa in Pecos County, ranged 200-800 per 100 sweeps. (Neeb).

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) - PENNSYLVANIA - Adults fewer than one per sweep on untreated alfalfa at Rock Springs, Centre County. Damage heavy with 140 mines per 10 stems. Most mines empty or in advanced state. (Istvan, Plummer).

SOYBEANS

DISEASES

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Number of new infestations on soybeans by county: Coffee 6, Franklin 3, Lincoln 10. Ranged very light to very heavy. (Harrison et al.).

BACTERIAL BLIGHT (Pseudomonas syringae) - KANSAS - Present in many soybean fields, increased in Riley County week ending July 9. Percent of plants infected (and severity) in surveyed fields by county: McPherson 30 (moderate), Marion 2-3 (light). (Sim).

INSECTS

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - FLORIDA - Larvae light on soybeans at Chiefland, Levy County. Averaged 1-2 larvae, some late instars, per foot of row on untreated soybeans at Quincy, Gadsden County, but increasing. (FL Coop. Sur.).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - FLORIDA - Girdling weakened soybean stems in several Jackson County fields; lodged plants after cultivation or rains July 5-9. (FL Coop. Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Light on soybeans statewide, defoliation less than 10 percent. New adults in southern counties. (U. Md., Ent. Dept.).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - MARYLAND - Economic in isolated soybean fields in southern and Eastern Shore counties. (U. Md., Ent. Dept.).

PEANUTS

INSECTS

GRANULATE CUTWORM (Feltia subterranea) - FLORIDA - Main problem on peanuts in Jackson County; treatment required for defoliation in 2 fields and for peg and pod feeding at Malone. (FL Coop. Sur.).
GEORGIA - Generally increased across peanut belt week ending July 10. Up to 6 larvae per row foot in some fields. (Womack).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpuncta howardi) - GEORGIA - Damage increased in many southwest peanut fields week ending July 10. Treatment required in few scattered fields. (Womack).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Punctured cotton squares by area: Rio Grande Valley 50 percent; Williamson and Milam Counties below 15 percent in older cotton but 20-50 percent in few fields; south-central populations increased; Blacklands 2-15 percent; Mitchell, Coleman, and Taylor Counties populations light to heavy; Ellis and Navarro Counties 16 percent in few fields, overwintered adults still moving into fields; Hunt and Collin 0-18 percent on treated cotton; Ellis and Navarro up to 47 percent where treatment for overwintered adults delayed; Howard and Martin Counties 0-2 percent, overwintered adults light, in isolated fields; Howard County 20-27 percent in isolated areas of field adjacent to shinnery belt; Knox County up to 60 percent in few untreated fields. Overwintered boll weevil adult population ranged moderate to heavy in Fisher, Jones, Knox, and Kent Counties; controls applied in first three counties. Total of 45 adults in 6 pheromone traps in Fisher and Jones Counties and 3 in 4 traps in Baylor County. (Deer et al.). ARKANSAS - Still light in most cotton fields. Heavier on taller cotton in some northwest fields. (Boyer). MISSISSIPPI - Cotton square infestation in hill section counties continued increase week of July 9. Current square damage below economic level. Damaged squares averaged 1-8 percent on 1,000 acres in Noxubee County. (Anderson). GEORGIA - Emergence of overwintered adults completed week ending July 10. First field generation emerged in north area. First "hatchout" ended in south area. (Lambert).

BOLLWORM (*Heliothis zea*) - TEXAS - Larvae increased on cotton in many Rio Grande Valley fields. Highs of 43 per 100 plants in several scattered fields east of Rio Hondo to south of Pharr. Larvae 20+ in many other fields. Eggs generally less than 70 percent. Heaviest counts in greener fields where young squares plentiful. Some larger boll feeding in very few fields. Eggs 0-4 percent and freshly deposited in El Paso; larvae 1-2 percent. Status elsewhere by county: Williamson and Milam adults, eggs, and larvae in almost all fields, second egg laying of season began July 2 and peaked July 5-7, egg laying somewhat erratic at Branchville, Milam County; Runnels, Tom Green, Schleicher, Howard, Glasscock, Martin, Midland, Reagan, and Upton eggs 0-2 per 100 plant terminals; Pecos and Reeves increased in isolated fields, eggs 2-20 and small larvae 0-2 per 100 plant terminals, and 0-2 percent damaged squares; El Paso and Hudspeth light activity; Ellis and Navarro light in nearly all fields, some large larvae; Blacklands eggs and small larvae increased in some fields. (Norman et al.).

COTTON FLEAHOPPER (*Pseudatomoscelis seriatus*) - TEXAS - Counts averaged about 7 percent in Island area of El Paso Valley, and 3-4 percent over rest of valley. Counts per 100 terminals by county: Williamson and Milam 0-15, slightly increased; Hunt and Collin well below damaging levels; Ellis and Navarro increased slightly, few fields required treatment, 0-30 percent infestations; Blacklands 5-25, no increase; Martin, Howard, Glasscock, Reagan, Upton, Pecos, and Reeves up to 5; El Paso, Hudspeth, Fisher, Hardeman, Jones, Knox, and Wichita up to 10; Knox and Wichita 11-23, moderate, in few fields. (Burgess et al.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MISSISSIPPI - Ranged 1-20 percent on cotton in Noxubee, Oktibbeha, Lowndes, and other hill section counties. Controls applied to "hot spots." (Anderson). GEORGIA - Increased on cotton in north area, nearly 10,000 adults and nymphs per acre week ending July 10. (Yonce).

TOBACCO

DISEASES

POTATO VIRUS Y - FLORIDA - Still present in tobacco but not so noticeable as earlier in season at Live Oak, Suwannee County, July 7. (FL Coop. Sur.). See GREEN PEACH APHID under this section.

BLACK SHANK (*Phytophthora parasitica* var. *nicotianae*) - TENNESSEE - Reported on tobacco in several central areas. (Kelly).

INSECTS

HORNWORM (*Manduca* sp.) - TENNESSEE - Up to 1,000 per acre based on one percent tobacco plant sample. Some fields contained large larvae at, or above, control level. Majority of larvae newly hatched and many fields not at control levels. Eggs heavy in many fields. (Gregory).

BUDWORM (*Heliothis* sp.) - TENNESSEE - Populations decreased, 2 of 22 tobacco fields at, or above, control levels. (Gregory).

GREEN PEACH APHID (Myzus persicae) - FLORIDA - Worst counts on tobacco up to June 9 dropped June 23 through July 7; controls applied to extra sucker growth. Averaged 60 per plant July 7. (FL Coop. Sur.). NORTH CAROLINA - Of 187 Lenoir County tobacco fields surveyed, 2 at or above threshold (25 percent of plants heavily infested) July 2-8. Heaviest infestation of 85 percent of plants heavily infested. Of 193 Bladen County fields, 11 at or above threshold. Heaviest level 40 percent of plants heavily infested. Decreased in Bladen and Lenoir Counties. (Harper et al.). Increased in 70 percent of 150 fields in Vance and Person Counties. (Hunt). Currently, of 193 Bladen County tobacco fields, 3 at or above threshold (25 percent of plants heavily infested). Heaviest infestation of 42 percent plants heavily infested. Continued decrease in most Coastal Plain areas. (Kirby, Reagan). MARYLAND - Economic in some tobacco fields in Charles and St. Marys Counties. Winged and wingless forms heavy in 50 percent of plants in 2 acres in St. Marys County. (U. Md., Ent. Dept.). WISCONSIN - Heavy on tobacco in all growing areas with observable honeydew. (WI Pest Sur.). See POTATO VIRUS Y under this section.

MISCELLANEOUS FIELD CROPS

INSECTS

SUNFLOWER MOTH (Homoeosoma electellum) - TEXAS - Present in all blooming sunflower fields in High Plains. (Morrison).

A FLEA BEETLE (Longitarsus waterhousei) - IDAHO - Adults 5-10 per sweep, damage moderate, to peppermint at Meridian, Ada County. (Baird).

POTATOES, TOMATOES, PEPPERS

DISEASES

BUCKEYE ROT (Phytophthora parasitica) - TENNESSEE - Severe rot of early ripening tomatoes in central area. (Kelly).

INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - UTAH - Problem in potato and tomato fields and gardens this season in Salt Lake County. (Hassell). MINNESOTA - Heavy damage in few potato fields in Marshall and Kittson Counties. Third and fourth instar larvae averaged 3 per plant. (MN Pest Rpt.). WISCONSIN - Large Portage County potato field treated; dying larvae about 12 per square foot on soil between plants. (WI Pest Sur.). INDIANA - Larvae and adults numerous on potatoes in Tippecanoe County. (York). NEW HAMPSHIRE - Damage light to potato crops at Lee, Strafford County, and Epping, Rockingham County, minimal in treated plots. (Burger).

BEANS AND PEAS

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - UTAH - Problem in many Salt Lake County bean patches and fields. (Hassell). OHIO - Damage to garden beans in central area. Ranged 10-80 percent leaf skeletonization. Larvae 1-8 (averaged 2) per leaf on bush beans in Franklin County. (Albrecht, Dowell).

PEA APHID (Acyrtosiphon pisum) - WISCONSIN - Heavy on peas in Dodge and Fond du Lac Counties. High field average of 85 per sweep in Dodge County, mostly nymphs. Most counts 0-8 per sweep. (WI Pest Sur.). IDAHO - This species and BEAN APHID (Aphis fabae) heavy. Required controls in many lentil fields in Clearwater, Nez Perce, and Latah Counties. (Kambitsch et al.).

CUCURBITS

INSECTS

SQUASH VINE BORER (Melittia cucurbitae) - GEORGIA - Heavy on squash in Spalding County. (Tippins). RHODE ISLAND - Larvae fed actively in stems of cucurbits in commercial fields and home gardens in Kent, Washington, and Providence Counties. (King et al.).

SQUASH BUG (Anasa tristis) - TEXAS - Infested squash in many gardens in panhandle. Moderate to heavy damage in Wichita, Wilbarger, and Young Counties. (Patrick, Boring).

DETECTION

NEW STATE RECORDS

INSECTS

AN ERIOPHYID MITE (Aculus comatus) - WASHINGTON - Clark County. (p. 440).

ZIMMERMAN PINE MOTH (Dioryctria zimmermanni) - TEXAS - Orange County. (p. 440).

NEW COUNTY RECORDS

INSECTS

AN ARMORED SCALE (Rhizaspidiotus dearnessi) - WISCONSIN - Burnett (p. 440).

BLUE ALFALFA APHID (Acyrtosiphon kondoi) - CALIFORNIA - Modoc; KANSAS - Thomas (p. 434).

CITRUS BLACKFLY (Aleurocanthus woglumi) - FLORIDA - Dade (p. 444).

A EULOPHID WASP (Tetrastichus julis) - OHIO - Montgomery (p. 443).

PECAN CARPENTERWORM (Cossula magnifica) - MISSISSIPPI - Bolivar (p. 439).

DECIDUOUS FRUITS AND NUTS

DISEASES

APPLE SCAB (Venturia inaequalis) - RHODE ISLAND - Easily found in most commercial orchards, problem common on apple-related ornamental plants in landscape situations in Washington, Kent, and Providence Counties. (Wallace et al.).

INSECTS

CODLING MOTH (Laspeyresia pomonella) - NEW MEXICO - First generation of adults appear to be peaking. Populations seem above average, all untreated fruit infested with first-generation larvae. Flights very heavy in all apple areas in southern part of State. (NM Coop. Rpt.).

PEACHTREE BORER (Sanninoidea exitiosa) - GEORGIA - Pheromone captures of males steadily increased week ending July 10. Averaged 18 males per trap in Crawford County. (Yonce). INDIANA - Adults 64 in 5 pheromone traps in Gibson County July 9-15. (Reed).

PEAR SAWFLY (Caliroa cerasi) - IDAHO - Larvae skeletonized leaves of cherry and hawthorn trees at Coeur d'Alene, Kootenai County. (Livingston). WISCONSIN - Heavy, damaging counts on pear, Cistina cherry, and cotoneaster in Washington and Racine County nurseries. (WI Pest Sur.).

A WEEVIL (Otiorhynchus meridionalis) - UTAH - Damaged pear and apple foliage at Smithfield, Cache County, at night. (Knowlton).

SAN JOSE SCALE (Quadraspidiotus perniciosus) - WASHINGTON - First second-generation crawlers July 9 on apple trunk at Parker, Yakima County. (Johnson, Hudson).

EUROPEAN RED MITE (Panonychus ulmi) - OHIO - Counts on Red Delicious apple trees increased tenfold to 18 per leaf in Fairfield County orchard. The predator Amblyseius fallacis (a phytoseiid mite) light, 0.18 per leaf. (Holdsworth).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Increased on pecans in Young County. Activity light on isolated trees in Ector and Terrell Counties. Problems continued in Mitchell, Irion, Callahan, and Taylor Counties. (Boring et al.).

PECAN CARPENTERWORM (Cossula magnifica) - MISSISSIPPI - Larvae collected from pecan trees at Benoit, Bolivar County, by J.H. Cochran, April 2, 1976. Determined by R.E. Anderson; confirmed by J.D. Solomon. This is a new county record. (Cochran).

PECAN NUT CASEBEARER (Acrobasis nuxvorella) - TEXAS - Heavy on untreated Wilbarger County pecan trees. Activity light on isolated trees in Ector County. Second generation emerging in Taylor County. (Hoelscher et al.).

BLACKMARGINED APHID (Monellia costalis) - MISSISSIPPI - Heavy on pecan trees statewide week of July 9. (Neel).

BLACK PECAN APHID (Tinocallis caryaefoliae) - TEXAS - Light to moderate in Brewster, Jeff Davis, and El Paso Counties. Infested pecan trees in Wichita County. (Neeb, Boring).

AN ERIOPHYID MITE (Aculus comatus) - WASHINGTON - Recovered beneath bud scales of filbert in orchard near La Center, Clark County, by R. Penrose, March 26, 1976. Determined by G.W. Krantz. This is a new State record. (Penrose).

SMALL FRUITS

INSECTS

AN ARMORED SCALE (Rhizaspidiotus dearnessi) - WISCONSIN - Collected from cranberry near Hertel, Burnett County, by J.O. Jackson, June 16, 1976. This is a new county record. (WI Pest Sur.).

ORNAMENTALS

INSECTS

BAGWORM (Thyridopteryx ephemeraeformis) - KANSAS - Larvae light to severe on arborvitae and baldcypress in Shawnee County nursery week of July 9. Defoliation serious on small trees at Manhattan, Riley County. (Bell).

FOREST AND SHADE TREES

DISEASES

PINE TIP BLIGHT (Diplodia pinea) - WISCONSIN - Dying shoots of 1976 growth on red and jack pines in Adams County. (WI Pest Sur.).

DUTCH ELM DISEASE (Ceratocystis ulmi) - MINNESOTA - Of 164 municipalities at Minneapolis and St. Paul, 85 indicate record loss of elm trees. As of June 30, total of 18,633 elms marked for removal compared to 27,044 for entire 1975 season. (MN Pest Rpt.).

INSECTS

ZIMMERMAN PINE MOTH (Dioryctria zimmermanni) - TEXAS - Larva collected from Pinus virginiana (Virginia pine) tree at Orange, Orange County, by E. Brown, February 10, 1976. Determined by D.M. Weisman. This is a new State record. Tree planted in 1973. (Lewis)

WESTERN SPRUCE BUDWORM (Choristoneura occidentalis) - IDAHO - Top defoliation on about 40 percent of mature grand fir and white fir. Smaller reproduction tree damage much heavier in northwest Adams County. (Kulhavy, July 4).

SPRUCE BUDWORM (Choristoneura fumiferana) - NEW HAMPSHIRE - Adult emergence almost completed throughout heavily infested areas at Pittsburg, Coos County. Some parasitized pupae still on older balsam fir. Adults very heavy on older white spruce and balsam fir throughout infested area. Areas of almost complete defoliation in extreme western area of Pittsburg. (Burger et al.).

MOUNTAIN PINE BEETLE (Dendroctonus ponderosae) - IDAHO - Outbreak 10-16 miles in diameter on lodgepole pines at Paddy Flat area of Valley and northwest Adams Counties. Beetle has not flown yet. (Kulhavy, July 4).

FALL CANKERWORM (Alsophila pometaria) - OHIO - Moderate to heavy defoliation of wild cherry, red oak, maple, and other hardwoods in southeastern Ashtabula County. Aerial survey July 2, revealed 30-70 percent defoliation of susceptible species scattered over several hundred acres. (Hartel). PENNSYLVANIA - Pupated on northern hardwoods. Defoliation in Potter County in late June heavy on about 21,500 acres. Most occurred from Coudersport west to McKean County and north on Oswayo Creek watershed. Some areas of heavy defoliation on Genesee River watershed. Defoliation moderate on about 186,780 acres in northwest, north-central, and several south areas. Light defoliation on about 45,500 acres. Defoliation in McKean County in late June heavy on about 42,760 acres. Most occurred in northeast from Smethport east to Potter County and north to the State line. Smaller areas of heavy defoliation noted from Eldred west to Bradford. Defoliation moderate on about 194,200 acres mostly in east and north-central areas. Defoliation light on about 60,256 acres. (Grecco).

SPRING CANKERWORM (Paleacrita vernata) - MONTANA - Larval damage light to severe to trees and shrubs at Billings, Yellowstone County. Larvae very near pupation. (Jensen).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Peak flight activity at Salem, Marion County, Portland, Multnomah County, and Eugene, Lane County, last week of June and first week of July. (Penrose).

LOCUST LEAFMINER (Odontota dorsalis) - WEST VIRGINIA - Damaged 80-90 percent of black locust trees in Wood, Jackson, Kanawha, and Fayette Counties. Damaged 25 percent of black locust trees in Summers County. (Hacker).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEW HAMPSHIRE - Feeding injury statewide, locally severe on elms at Durham, Strafford County. (Burger).

A SAWFLY (Caliroa quercuscoccineae) - WEST VIRGINIA - Larvae heavily damaged scarlet and red oak trees in parts of Greenbrier and Summers Counties July 1. (Fulk). Adults, eggs, first and late-instar larvae on scarlet and red oaks in Summers County. Heavily damaged about 1,000 acres of oaks, mostly tops of trees, at Pipe-stem State Park. Most infested leaves completely skeletonized July 7. Damage in southwest Raleigh County. (Miller, Hacker).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - UTAH - Noticeable on cattle in central and north counties. (Knowlton). TEXAS - Moderate to heavy on cattle in Baylor, Haskell, Wilbarger, Young, Ector, Terrell, Brewster, Jeff Davis, and Pecos Counties. Moderate on sheep and goats in Upton and Terrell Counties. Increased in Sterling, Taylor,

Gillespie, Callahan, Coleman, and Irion Counties. (Wilson et al.). NEBRASKA - Averaged 500+ on untreated southwest district cattle July 6-8. (Campbell). MISSOURI - Light to moderate, 41-400+ per animal, on cattle in east-central and south-central areas. (Munson). MISSISSIPPI - Still heavy on cattle statewide. (Anderson). KENTUCKY - Mean per side on cattle by county week ending July 9: Casey none on 10 treated yearling Hereford bulls, 17 on Hereford cows treated 14 days earlier; Shelby 94 on 10 treated 10-month-old Holstein heifers, 116 on untreated Hereford cows. (Christensen). Current mean per side by county: Casey 188 on 10 Angus cows, 2.5 on 10 calves; Harrison 174 on 11 untreated mixed breed cows, none on 10 treated steers; Lincoln 62 on 10 untreated polled Hereford cows, none on calves, none on 10 treated yearling polled Hereford bulls and in adjoining pastures, 47 on 10 untreated yearling heifers. (Scheibner). INDIANA - Adults 100+ per head on 3 Hereford heifers and one steer in Warren County herd. (Harris). NEW HAMPSHIRE - Averaged 150 per animal on beef cattle at Durham, Strafford County, and Epping, Rockingham County. (Burger).

FACE FLY (Musca autumnalis) - MISSOURI - Ranged 5-40 per head on cattle and 3-22 on horses in east-central area. (Munson). MISSISSIPPI - Adults per head of cattle by county: Oktibbeha (treated) 15+, Attala 20+, Choctaw 30+, Madison 7+. Heavy in north area, eye problems common. (Anderson). KENTUCKY - Mean per head on cattle by county week ending July 9: Casey 6 on 10 treated yearling bulls, 29 on Hereford cows treated 14 days earlier and 18 on young calves; Shelby 10 on untreated 10-month-old Holstein heifers, 2 on Hereford cows. (Christensen). Current mean per head by county: Casey 44 on 10 Angus cows, 28 on 10 calves; Harrison 34 on 11 untreated mixed breed cows and 21 on 10 calves in same herd; Lincoln 50 on 10 untreated polled Hereford cows and 28 on 10 calves in same herd, 14 on untreated yearlings heifers, 9.2 on 10 treated yearling bulls. (Scheibner). INDIANA - Adults averaged about 30 per face on 3 Hereford heifers and one steer in Warren County herd. (Harris). NEW HAMPSHIRE - Averaged 15 per face on beef cattle at Durham, Strafford County, and Epping, Rockingham County. (Burger).

STABLE FLY (Stomoxys calcitrans) - NEBRASKA - Averaged 10 per leg on cattle in Dawson and Lincoln County feedlots July 7. (Campbell). WISCONSIN - Annoyance light to moderate on cattle in Chippewa, Door, and Jefferson Counties. (WI Pest Sur.). NEW HAMPSHIRE - Averaged 20 per animal on beef cattle at Durham, Strafford County, and Epping, Rockingham County. (Burger).

A TABANID FLY (Tabanus nigrovittatus) - NEW HAMPSHIRE - Very heavy in flyways bordering salt marshes at Seabrook, Rockingham County. Adults, 50-60, attempting to bite at ecotone of marsh and inland forested areas. (Burger).

MOSQUITOES - UTAH - Very annoying at Logan, Benson, Amalga, and Logan Canyon, Cache County. Very annoying to campers and fishermen in Spring Hollow and Third Dam area of Logan Canyon. (Knowlton). MINNESOTA - Number of Aedes vexans doubled with appreciable increase of Coquillettidia perturbans in light traps July 3-9. Few showers last week of June appeared to have developed another brood. Day bite collections for same period in descending rank: A. vexans, A. stimulans, and C. perturbans. (MN Pest Rpt.). MISSISSIPPI - Culex quinquefasciatus heavy in rural Oktibbeha County area, 679 adults in one baited trap. Urban population still light due to fogging program, but increasing. (Bertsch).

MASSACHUSETTS - A. excrucians predominant at Amherst, Hampshire County. A. vexans and A. canadensis still moderate. (Arnott).
NEW HAMPSHIRE - Aedes sollicitans second-generation larvae in third and fourth instars in pools on marsh. Averaged 200-300 per dip in most isolated pools at southern Seabrook, Rockingham County. (Burger).

EAR TICK (Otobius megnini) - TEXAS - Increased on cattle in Blacklands. Light to heavy in San Angelo area counties. (Hoelscher, Wilson).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

A EULOPHID WASP (Tetrastichus julis) - INDIANA - Larvae recovered from Oulema melanopus (cereal leaf beetle) larvae on oats in Boone, Johnson, and Montgomery Counties by R.R. Heaton and E. Huff in early June 1976. Determined by L. Leiser. These are first recoveries. Parasitoids previously released in 1975 and/or earlier. (Favinger). OHIO - Larvae recovered from Oulema melanopus (cereal leaf beetle) larvae collected from oats in Randolph Township, Montgomery County, by F. Prentice, June 21, 1976. Determined by V.E. Montgomery. This is a new county record. (PPQ).

A WEEVIL (Rhinocyllus conicus) - WEST VIRGINIA - Released at 9 Jefferson County sites and 4 Berkeley County sites on musk and curled thistle July 14. First releases in these counties. (Moore).

FEDERAL AND STATE PROGRAMS

DISEASES

BLACK STEM RUST (Puccinia graminis var. tritici) - KANSAS - Fairly heavy on some hybrid wheat varieties in northwest area week of July 9. (Sim).

INSECTS

GRASSHOPPERS - CALIFORNIA - Melanoplus devastator nymphs up to 17 per square yard in Fresno County week ending July 9. Migrated from foothills to other lower areas. Damaged avocados, citrus, vegetable gardens, yard ornamentals, and marigold plants. (CA Coop. Rpt.). Currently migrating bands of Melanoplus devastator, Oedaleonotus enigma, and Dissosteira pictipennis from rangelands caused considerable damage to grape plantings and young avocado trees at Temecula, Riverside County. About 50 percent of avocado orchard defoliated. Up to 45 grasshoppers per square yard in local spots in rangeland. Migrated into avocado, citrus, and persimmon orchards at Valley Center, San Diego County. Citrus seemed hardest hit. Damage up to 98 percent on parts of trees in 80-acre grove. Counts 15 per square foot in local areas in rangeland near citrus plantings. Some controls applied, but grasshopper pattern indefinite. (CA Coop. Rpt.). NEVADA - Bradynotus obesa averaged 6 per square yard on 2,000 acres of rangeland in Blue Lake area, Pine Forest Range, Humboldt County. (Kail). UTAH - Grasshopper nymphs heavy in some Salt Lake County wheat and barley fields. Nymphs spottedly numerous on Salt Lake County rangelands. (Hassell).

MINNESOTA - Averages per square yard by district in corn, alfalfa, and roadside week of July 9: Southeast trace, south-central trace to 1-2, southwest 3-5, east-central trace to 3, northwest one, west-central 9-15 (especially northwest Wilkin County, "hot spot" of previous years). Current counts per square yard by district: mostly trace, high of 36 in Houston County; southwest, east-central, central, and west-central averaged 2-5. Heaviest in west-central and northwest areas. Second cutting of alfalfa nearly completed in all districts except in northwest. (MN Pest Rpt.).

GYPSY MOTH (Lymantria dispar) - PENNSYLVANIA - Males flying in Sugar Valley, Walker Township, Clinton County. Defoliation 70 percent on ridges of mountains in area and 10 percent in valleys. Pupation underway in Black Moshannon State Park; infestation light. (Mastro). NEW YORK - Larvae 50+ per tree July 6 at Fulton, Oswego County. About 5 percent defoliation. (Ellenberg). Male flight July 6 at Syracuse, Onondaga County. (Burns).

JAPANESE BEETLE (Popillia japonica) - INDIANA - Adults numerous on soybeans in Newton County field. Defoliated some ornamentals at Lafayette, Tippecanoe County. Reported on ornamentals from other cities. (Sillings). KENTUCKY - Fed on apples in Montgomery County orchard and backyard apples in Boyd County week ending July 9. (Scheibner). TENNESSEE - Heavy in some Morgan County areas, first time economic on horticultural, garden, and field crops in county. (Jansch). NORTH CAROLINA - Ornamental defoliation severe in Stanly, Gaston, and Lincoln Counties week ending July 9. Defoliation 80 percent on 8-foot ornamental trees in Stanly County. First adults in Ashe and Alleghany Counties. (Blackmore, Johnson).

MORMON CRICKET (Anabrus simplex) - IDAHO - Control efforts last half of June successful. Except for Deep Creek Mountain area, all known infestations within untreatable mountainous locations. Control on intermittent basis in these areas. Only solitary crickets in lower range and none near cropland at Midvale, Washington County. Early season baiting produced excellent results. Bands in few isolated areas in Elmore County. Treatment by ground equipment last half of June controlled more accessible bands. (Homan).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Cooperative spray program now includes 293,000 acres of grassland treated in Union, Colfax, and Harding Counties. (NM Coop. Rpt.).

SCREWORM (Cochliomyia hominivorax) - Total of 947 cases reported from continental U.S. June 20 to July 3 as follows: Texas 932, New Mexico 6, Arizona 9. Total of 909 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 642 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 316,050,600 as follows: Texas 261,096,600; New Mexico 19,768,500; Arizona 35,185,500. Total of 21,987,000 sterile flies released within Barrier of Mexico. (Vet. Serv.).

CITRUS BLACKFLY (Aleurocanthus woglumi) - FLORIDA - Pupae and adults collected from sweet orange tree at residence in Carol City, Dade County, July 16, 1976. Collected by L. Leggerio. Determined by J. McCluskey. This is a new county record. Collection 5 miles south of previous known infestation in south Broward County. (FL Coop. Sur.).

HAWAII PEST REPORT

Detection - No additional specimens of BROWN GARDEN SNAIL (Helix aspersa) recovered in spite of heavy baiting and periodic surveys in and around residential lot of Koloa, Kauai. (Sugawa).

General Vegetables - CARMINE SPIDER MITE (Tetranychus cinnabarinus) moderate on 1.5 acres of eggplant at Kapahi, Kauai, and 2,000 square feet of lima beans, 0.25 acre of bush beans, 1,000 square feet of eggplants, and 2,000 square feet of tomatoes at Hawaii Kai, Oahu. All foliar damage light. (Sugawa, L. Nakahara). Infestations and damage by LEAFMINER FLIES (Liriomyza spp.) heavy on 0.25 acre of snap beans at Pulehu, Maui, and 5,000 square feet of togan at Waianae, Oahu. Light on 1,000 square feet of cucumbers at Hawaii Kai, 5,000 square feet each of tomatoes and eggplants, and 0.5 acre of hyotan at Waianae. Large numbers of the parasite, Diglyphus begini (a eulophid wasp) in abandoned one-acre field of tomatoes heavily infested by leafminer flies at Wailua Homestead, Kauai. (Kumashiro et al.). Moderate infestations and damage (50 percent of leaves, 1-2 larvae per leaf) by TOMATO PINWORM (Keiferia lyco-persicella) on 0.5 acre each of tomatoes and eggplants at Wailua Homestead. Heavy in adjacent abandoned tomato field. (Sugawa). DIAMONDBACK MOTH (Plutella xylostella) counts and damage moderate on 5,000 square feet of head cabbage (50 percent of heads; 1-4 larvae per head) at Hawaii Kai and in planting of broccoli (4 larvae per leaf) at Waianae. (Otsuka et al.). Moderate counts and damage (5-30 per leaf) by all stages of a THRIPS (Kurtomathrips morrilli) on eggplant leaves in planting at Ewa, Oahu. Only wingless adults recovered. Determined by K. Sakimura. Recorded only from Pluchea odorata in State. (L. Nakahara). Moderate counts and damage (50 percent of terminals) by BEET ARMYWORM (Spodoptera exigua) on 1.5 acres of bell pepper at Kapahi, Kauai. Apanteles marginiventris (a braconid wasp) reared from armyworm sample. (Higa, Sugawa). SOUTHERN GARDEN LEAFHOPPER (Empoasca solana) infested 90 percent of leaves with heavy damage in yard planting of cowpeas at Pearl City, Oahu. (L. Nakahara).

Fruits and Nuts - Moderate infestations of BLACK CITRUS APHID (Toxoptera aurantii) associated with Coelophora inaequalis (common Australian lady beetle) on young terminals of 50 orange and tangerine trees in yards at Haiku, Maui. This aphid light on back-yard citrus at Kahului and Wailuku, Maui. (Ah Sam, Miyahira).

Beneficial Insects - APHELINID WASPS (Encarsia variegata and Encarsia sp. #2) and an ENCARTID WASP (Prospaltella smithi) parasitized all Aleurocanthus spiniferus (orange spiny whitefly) on one citrus and 72 rose plants surveyed in March at Kapahulu, Oahu. E. variegata reared from whiteflies on citrus while other 2 species recovered from infested roses. (Otsuka). A GALL FLY (Procecidochares alani) galled 30-90 percent of Ageratina riparia (Hamakua pamakani) terminals at Laupahoehoe, Kaloko, Onomea, and Kaumana, Hawaii Island. Defoliation 50 percent on this host by a PTEROPHORID MOTH (Oidaematophorus sp.) at Volcano and Ahulua, Hawaii. (Matayoshi, Yoshioka).

Miscellaneous - Nymphs and wingless adults of an APHID (Dactynotus sonchi) heavy on Sonchus oleraceus (annual sowthistle) during recent detection survey at Hickam Air Force Base, Oahu. (Chun, L. Nakahara).

LIGHT TRAP COLLECTIONS

[illegible]

[illegible]

Kanawha 7/15

Kanawha 7/15

Raleigh 7/12

WISCONSIN

Evansville 7/6-12

Hancock 7/8-14

Plant Importation and Technical
Support Staff

The following is a list of exotic plant pests which quarantine authorities have recently prevented from entering the United States.

	<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Pucciniastrum areolatum</u> (Fr.) Otth a rust	aecial	10 pounds of fir seed	Hoboken	Unknown	USA
<u>Puccinia tillandsiae</u> Cumm. & Pollack a rust	uredial	on leaves of 60 bromeliad plants	San Francisco	Guatemala	CA
<u>Ovalisia virgata</u> (Motschulsky) a buprestid beetle	adult	4 containers of dunnage	New Orleans	Japan	LA
<u>Trogoderma granarium</u> Everts a khapra beetle	larval	2 bags of Hibiscus flowers	New York	Africa	NY
<u>Chilo phragmitellus</u> (Hubner) a crambid moth	larval	4,069 rolls of reed mats	Houston	Austria	USA
<u>Pallifera costaricensis</u> crosseanus (Strebel & Pfeiffer) a slug	adult	42 bundles of Chamaedorea palm fronds	Houston	Guatemala	TX
<u>Theba pisana</u> (Muller) white garden snail	juvenile	100 empty containers	New York	Cuba	USA

1/ Initiated by M. J. Shannon, National Program Planning Staff

WEATHER OF THE WEEK ENDING JULY 18

Reprinted from Weekly Weather and Crop Bulletin Supplied by National Weather Service, NOAA.

HIGHLIGHTS: Widespread thunderstorms rampaged across the Nation during the week. Heavy rains swelled the already bulging Texas, Vermont, Ohio, and West Virginia waterways to flood levels and caused flash flood activity in many areas. Precipitation made news in West Enfield, Maine, with 5 inches and Corpus Christi, Texas, 4.5 inches in 24-hour periods. Although temperatures remained seasonably warm and sometimes hot, as showers and thunderstorms ranged over most of the country, forecasters reported unseasonably low weekly readings over southwest Texas, portions of New York, and Pennsylvania. A Canadian cool air mass Saturday dropped temperatures in the eastern segment of the Nation to end the week's weather story.

TEMPERATURE AND PRECIPITATION: Scattered thunderstorms and warm temperatures dominated the Nation's weather picture Monday. A threat of flash floods loomed over Ohio, West Virginia, Vermont, and Texas from heavy morning rains and thunderstorms. Showers and thunderstorms spread over the northern Rockies into the western Plains along the gulf coast over the Atlantic coast from the Mississippi Valley into the Tennessee Valley. Midday temperatures ranged from 42 degrees in Bremerton, Washington, to 99 degrees in Rochester, Minnesota, and Pierre, South Dakota. Readings in other parts of South Dakota and Nebraska nudged the 100 degree mark. Out of the shower and thunderstorm area, a seasonably hot afternoon took shape. By nightfall, storm activity delivered high winds, heavy rains, and hail in Rapid City, South Dakota. Strong winds extended into the northern Rockies and gusted up to 50 m.p.h. at Havre, Montana.

Other thunderstorms developed in central Georgia while several persisted in the Gulf States, New England, and northeastern New York. The day ended with clear skies and dry weather from the Pacific coast to the Rockies. A deep low pressure center produced cloudy skies and lower temperatures in the Great Lakes area and the northern and middle Atlantic States early Tuesday morning. Early morning temperatures plunged to record lows of 45 degrees in Lansing, Michigan, 48 degrees in Detroit, Michigan, 49 degrees in Indianapolis, Indiana, and 53 degrees in Richmond, Virginia. Temperatures rose with the day's progression. Although the mercury hit 90 degrees plus in the east-central Plains, portions of the mid and upper Mississippi Valley, and much of the southern half of the Nation, it was contained in the 60's in the northern half of the Intermountain region, northern Atlantic States, northern New England and most of upstate New York. Severe thunderstorm activity moved throughout southwest Texas and activated flash flood watches. Winds of 60 m.p.h. buffeted southern Minnesota and uprooted trees as funnel shaped clouds flitted around the State's countryside. Thundershowers moved into western Tennessee and eastern Georgia and from New England to New Jersey.

Weather conditions changed little in the Far West as clear skies prevailed along the Pacific coast and the Intermountain region. Midweek reports noted severe storm activity which pelted Mt. Rushmore, South Dakota, with golf ball-sized hail and gusting

winds. Scattered showers and thundershowers stretched from Texas along the gulf coast into Florida and covered New England and most of New York State. Isolated thunderstorms dotted the southern Rockies into the Arizona and Colorado Mountains. Skies remained sunny over the west coast and the Pacific Northwest with near normal temperatures for mid-July. Violent winds accompanied lines of intense thunderstorms as they moved from the middle Atlantic States into the southern Plains and over the Great Lakes region. Strong winds measured 85 m.p.h. in Greensboro, North Carolina, 50 m.p.h. in east Dayton, Ohio, 76 m.p.h. in Washington, D.C.-- National Airport, and 67 m.p.h. in Columbus, Ohio, and Charleston, West Virginia.

Other severe weather included five tornadoes that touched down in Texas, two in Ohio, and one each in Indiana, Kansas, and southwest Pennsylvania. Temperatures ahead of the thunderstorms soared into the hot category on Thursday. Macon, Georgia, and Richmond, Virginia, each set record highs of 100 degrees while Raleigh, North Carolina, reached a high of 98 degrees. The high in the Nation leaped to 110 degrees in Needles, California, and Buckeye, Arizona. As the thunderstorms charged through Kansas, 4 inches of rain deluged Overland and caused Culverts to Flood. Recorded cool temperatures centered over the northern Plains as an unseasonably cool air mass from Canada moved into the Nation early Friday morning. Flooding continued in Texas as thunderstorms and heavy rains barraged the State. High pressure centers brought cool dry air from parts of the northern and central Plains and the upper Mississippi Valley into the Ohio Valley and Great Lakes region. Unseasonably cool temperatures prevailed in the East while heavy thunderstorms remained in the south-central States over the weekend. The heaviest precipitation covered Texas. Thundershowers moved from southern Oregon to northern and central California across the Plateau into the northern Rockies.

NATIONAL WEATHER SERVICE 30-DAY OUTLOOK MID-JULY TO MID-AUGUST

The National Weather Service's 30-day outlook for mid-July to mid-August is for temperatures to average below seasonal normals from the central and southern Great Plains eastward through the middle and lower Mississippi Valley to the Ohio Valley and the south Atlantic coast. Above normal averages are indicated for the western quarter of the Nation and also New England. In unspecified areas near normal temperatures are in prospect. Rainfall is expected to exceed the median amount east of the Mississippi River and also over the southern Great Plains, the lower Mississippi Valley and southern portions of both the central Great Plains and the middle Mississippi Valley. Elsewhere, less than the median value is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

UNITED STATES DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service
Hyattsville, Maryland 20782

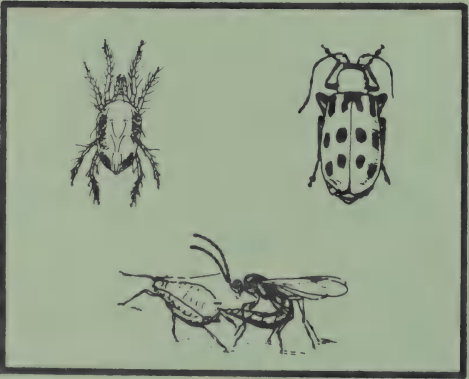
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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
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COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM heavy on grasses in parts of South Carolina and Kansas. Damage heavy in North Carolina. (p. 453).

Controls needed for CORN EARWORM in New Mexico. Movement to cotton and soybeans increasing in North Carolina. (p. 453).

Some very severe counts of GREENBUG on sorghum in Texas, Oklahoma, Kansas, and Iowa. (p. 454).

POTATO LEAFHOPPER yellowing some alfalfa in Maryland, Pennsylvania, Ohio, and Indiana. (p. 454).

EUROPEAN CORN BORER infested about 30 percent of corn in Kansas and Nebraska. Damaged corn in parts of Iowa, Ohio, and Pennsylvania. (pp. 455-456).

Adults of CORN ROOTWORMS began feeding on corn silks in Iowa and Wisconsin. (pp. 456-457).

FALL ARMYWORM heavy on sorghum in parts of Oklahoma and Kansas (p. 456) and grasses in parts of Texas, Oklahoma, and Kansas. (pp. 457-458).

BARLEY YELLOW DWARF VIRUS may involve almost all oats in New York. (p. 457).

BOLL WEEVIL beginning to puncture a high percentage of cotton squares in parts of Texas and Oklahoma. (p. 460).

Only nonsterile MEDITERRANEAN FRUIT FLIES trapped in California to date. All fruit collections negative. (p. 467).

More RANGE CATERPILLAR infestations found in Cimarron County. (p. 467).

Detection

COMMON CRUPINA is a new State record for California. (p. 467).

For new county records, see page 469.

Reports in this issue are for the week ending July 23, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ARMYWORM (Pseudaletia unipuncta) - SOUTH CAROLINA - Heavy in Sumter County pasture. (Griffin). NORTH CAROLINA - Young larvae, mostly third instar or younger, heavily damaged Coastal bermudagrass in Scotland County; 1,100 acres treated and good control achieved with one application. (Lane). KANSAS - Larvae averaged up to 10 per square foot, feeding on crabgrass in corn near Trousdale, Edwards County. Light on grass in corn in south-central Finney County. (Bell). NORTH DAKOTA - Second-instar larvae infested barley field in Pembina County. Activity starting. (Scholl).

ASTER LEAFHOPPER (Macrosteles fascifrons) - MICHIGAN - Heavy in some celery fields near Hudsonville, Ottawa County, week of July 16. (Cress).

CORN EARWORM (Heliothis zea) - NEW MEXICO - Still in corn, controls necessary in Chaves and Dona Ana Counties. (NM Coop. Rpt.). OKLAHOMA - Counts by county week of July 16: Canadian heavy on emerging corn tassels; Major moderate in one field; Garvin, Carter, Grady, Canadian, Blaine, and Major 0-3 per 10 sweeps of alfalfa; Greer 32 adults in light trap. Current counts by county: Pittsburg 2-3 per plant in sorghum, Kay moderate in sweet corn, Greer 51 adults in light trap for period, and Tillman 2 adults trapped. (OK Coop. Sur.). ALABAMA - Larvae light in 8 fields from all areas. Counts on 60 feet of row by county: Marshall 7 in one field, one plus in others; Monroe 7; Etowah one; Morgan 3. Some corn in Geneva and Mobile Counties being harvested. (McQueen). NORTH CAROLINA - Averages in Northampton County increased from 10 to 15 per night, indicating increased movement from corn to cotton and soybeans. Egg laying expected next 14 days. (Harrell, Robertson). MARYLAND - Eggs or young larvae infested 0-8 percent of sweet corn ears in silk in Eastern Shore counties. (U. Md., Ent. Dept.).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Counts on grain sorghum by county: South Plains area light to heavy with some decrease, Pecos heavy in isolated fields, Glasscock and Hudspeth moderate to heavy. (Morrison, Neeb). OKLAHOMA - Counts per sorghum plant by county week of July 16: Major 0-300, Dewey 0-150, Blaine 0-300, Stephens 50-400, Murray 0-200, Payne averaged 40. Current counts on sorghum by county: Beckham and Washita very heavy in scattered fields but damage light, and Ottawa 0-200 per plant. (OK Coop. Sur.). KANSAS - Infestations generally light to moderate in whorls of preboot sorghum 3-32 inches tall in northeast, southeast, south-central, southwest, and west-central districts. Heavy in whorls of scattered plants in some fields in McPherson and Grant Counties. Lady beetles reduced heavier counts. (Bell). WISCONSIN - Corn plants with heavy counts by county: Rock, Green, and Lafayette generally 20 percent of plants with colonies of 500+ aphids, but 70 percent in individual fields in last 2 counties; central up to 8 percent with large colonies; La Crosse and Trempealeau in many fields. (WI Pest Sur.). MICHIGAN - Heavy in soybeans in Cass and St. Joseph Counties week of July 16. (Hammon, Hothem).

GREENBUG (*Schizaphis graminum*) - TEXAS - Counts on grain sorghum by county: Hale up to 1,800 per plant in untreated fields, non-economic in many treated fields; South Plains continued increase; Trans-Pecos continued increase, colonies with 500+ greenbugs per leaf in isolated fields in Pecos and Hudspeth Counties. First parasitized greenbugs in Castro and Lubbock Counties. (Latham et al.). OKLAHOMA - Counts per sorghum plant by county week of July 16: Texas 10-1,000, some fields treated; Major 0-200 and 0-150 in 2 fields; Payne averaged 80; Blaine 100-500 in one field; Dewey 0-180; Grady 200-2,500 in blooming sorghum field; Stephens 50-500; Garvin and Murray light. Current counts on sorghum by county: Washita and Beckham heavy, some fields up to 5,000 per leaf; southwest up to 200 per leaf on young plants; Texas 15-1,500 per plant; Major moderate; Cimarron light. (OK Coop. Sur.). KANSAS - Generally light on sorghum statewide. Counts per plant in some southwest county fields: Stevens and Kearney up to 2,000; Grant as few as 12 on sorghum 16 inches to boot stage. Many southwest area infestations controlled by lady beetles. (Bell).

ARKANSAS - Light in one sorghum field in Clay County. Very light feeding signs in most fields but no aphids present. Abundant supply of lady beetles keeping aphids under control. (Boyer). NEBRASKA - Averages per sorghum plant by county week ending July 16: Clay increased slightly in experimental plots, Rock 0.5, Keya Paha 200 and 74 (resistant variety), York and Hamilton 173, Clay 33.6. Current averages per sorghum plant (and damage) by county: South-central area increased; Clay 312 (from scattered red spotting to one large leaf killed); York, Merrick, Hall, and Hamilton 119 on susceptible plants 26 inches to heading stage; Saunders 1,000+ on resistant sorghum at Mead (little or none visible); Lincoln 300. (Peters et al.). IOWA - Counts of 2,000 per plant damaged grain sorghum in Palo Alto Counties. (IA Ins. Sur.).

POTATO LEAFHOPPER (*Empoasca fabae*) - MARYLAND - Increased in central counties. Adults 6 per sweep and "hopperburn" in some alfalfa fields. (U. Md., Ent. Dept.). PENNSYLVANIA - Activity on alfalfa reduced because of cool, rainy weather. Averages per sweep (and damage) by county: Butler 0.8-1.0 (mostly trace), Centre 0.5-2.2 in stubble and up to 10.0 in uncut fields, Clinton 0.4, Crawford 3.2-6.0 (some yellowing), Snyder 1.2-6.3, Union 0.05-0.15, Venango 4.6 (some yellowing). (Shetlar et al.). OHIO - Yellowing light to moderate on uncut second-growth alfalfa in east area. Adults 80-220 per 100 sweeps in Columbiana County. (Lewis). KENTUCKY - Means on alfalfa in Warren County: 2.9 adults per 10 sweeps in 32-inch second growth and 0.4 adults per 10 sweeps in 4-inch third growth; nymphs 0.2 per stem for both samples. (Christensen). INDIANA - Counts per sweep by area: South up to one per sweep in well-managed alfalfa (yellowing poorly managed stands) and north up to 3 common in potatoes and snap beans. (Moriwara, York). MICHIGAN - Heaviest in years on alfalfa week of July 16. Noted on dry beans. (Ruppel). WISCONSIN - Continued increase on alfalfa; ranged from fewer than one to 15 per sweep in southeast, south-central, southwest, west-central, and central counties. Up slightly on potatoes in Spring Green and Central Sands. Ranged 4-12 per 50 sweeps there, on lima beans in Rock and Walworth Counties, and on snap beans in Central Sands. (WI Pest Sur.).

TOBACCO BUDWORM (*Heliothis virescens*) - KENTUCKY - Larvae non-economic, averaged 2 per 100 tobacco plants, in 1.5-acre Anderson County field. No parasitism. (Gregory). MARYLAND - Increased in south counties. Larvae 20 per 100 tobacco plants on farm in Prince Georges County. (U. Md., Ent. Dept.).

CORN, SORGHUM, SUGARCANE

DISEASES

COMMON CORN RUST (*Puccinia sorghi*) - KANSAS - Becoming evident on corn statewide. Infections very light, little loss expected. Light and scattered in southwest area. Trace in Riley, Atchison, and Jefferson Counties. (Sim).

CORN BROWN SPOT (*Physoderma maydis*) - KANSAS - First of season. Trace on corn in Jackson County field. (Sim).

MAIZE DWARF MOSAIC VIRUS - KANSAS - Infection on corn trace in Pottawatomie, Jackson, and Atchison Counties and 5 percent in Montgomery County. Evident in sorghum in north-central and northeast areas, but relatively few plants in fields surveyed infected. Red leaf stage trace in Riley, Clay, Washington, and Republic Counties. Percent infection by county: Doniphan, Atchison, and Jefferson trace, Pottawatomie 2, Montgomery 5, and Chautauqua 15. (Sim).

INSECTS

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - GEORGIA - Infested 70-80 percent of stalks in 8 acres of sweet corn in White County week ending July 17. (Chambers, Harris). ALABAMA - Larvae trace in cornstalks in 180-acre field at Grangeburg, Houston County, week ending July 16. Larvae one per 60-foot row in early silking Monroe County field. (McQueen). KANSAS - Second-brood adult flights underway throughout most areas except northwest and possibly west-central areas. Mostly pupae on Edwards County corn. Egg laying well underway on irrigated silking corn in Sedgwick County; infested 0-30 percent of plants. (Bell). NEBRASKA - Averaged 27 percent of plants infested in 2 corn fields in Clay County week ending July 16. Pupation 5 percent in 230 corn fields in York, Hall, Merrick, Fillmore, and Buffalo Counties. (Woolsey, Miller). Currently, first generation well underway, some second generation in northeast and south-central districts. About 5,000-10,000 acres treated for first-generation larvae in northeast district. Second-generation larvae infested 10 percent of corn in 10 fields in Brown and Rock Counties. Some egg masses unhatched. Infested 5-23 (averaged 16) percent of plants in 3 Clay County corn fields. Egg masses ranged 8-32 (averaged 21) per 100 plants. (Witkowski et al.).

IOWA - Fourth and fifth-instar European corn borers and pupae in Boone County corn field. Damaged 4-44 (averaged 20) percent of stalks. (IA Ins. Sur.). MINNESOTA - Almost all of first generation will pupate and could produce large second brood. Heavier in light traps, especially from south area. (MN Pest Rpt.). WISCONSIN - First adult flight continued at some east and north sites. Pupation of spring generation well underway in south and as far north as Portage and St. Croix Counties, but no second flight in south sites as of July 22. (WI Pest Sur.).

INDIANA - European corn borer pupation very light in corn as far north as Steuben County. (Meyer). OHIO - Percent damaged corn averaged by county: Columbiana and Mahoning 34; Delaware averaged less than one percent in 3 no-till fields. (Lewis). MARYLAND - Fresh egg masses averaged 3 per 100 plants, newly hatched larvae in silks of sweet corn in Eastern Shore counties. (U. Md., Ent. Dept.). PENNSYLVANIA - Second-generation larvae damaged whorls and stalks on corn. Larvae fewer than one per plant in Cumberland, Franklin, Lebanon, and Tioga Counties. Green County had 17 and 21 per 20 plants. (Kim). NEW HAMPSHIRE - Continued extensive damage to sweet corn in southeast area. Damage especially severe in seacoast region. (Bowman).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - NEW MEXICO - Adult emergence underway in Curry and Roosevelt Counties. Pupae averaged one per cornstalk, heavier than normal for time of year. (NM Coop. Rpt.). TEXAS - Few adults emerged in Hale County. Eggs and second generation expected soon. Percentage of cornstalks infested with first-generation borers ranged from zero to almost 100 percent per plant. Light at El Paso. Mostly larvae or pupae in South Plains. Second-generation adults will begin emerging July 19-23. (Latham et al.).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Heavy on young sorghum (one field each) in Latimer, Murray, Pawnee, and McIntosh Counties week of July 16. Light in most east-central area fields. Counts on sorghum by county: Pontotoc and Johnston heavy, Delaware averages heavy in one field, Mayes light in one field, Muskogee and Sequoyah averaged about 5 percent of plants. (OK Coop. Sur.). KANSAS - Moderate to heavy in sorghum whorls in some Montgomery County fields, infested 0-50 percent of plants. Damaging in Cowley County. Moderate in Elk County. (Bell). KENTUCKY - Infested 37 percent of 75-acre Green County corn field. (Gregory).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - NEBRASKA - Adults increased sharply in southwest half of State and in northeast area. Total of 1,700 in blacklight trap at Imperial, Chase County. Fresh egg masses on 10 percent of corn in Dundy County field. Egg masses trace on 10 percent of 230 fields in York, Merrick, Hamilton, Hall, Fillmore, and Buffalo Counties. Infested 15-90 (averaged 30) percent of corn in 9 fields in Antelope and Wheeler Counties; all fields treated. Hatching in 10 fields in Brown and Rock Counties but still light. (Linscott et al.).

CORN ROOTWORMS (Diabrotica spp.) - UTAH - WESTERN CORN ROOTWORM (D. virgifera) adults very numerous at Tremonton, Box Elder County; required control. (Finch, Roberts). OKLAHOMA - SOUTHERN CORN ROOTWORM (D. undecimpunctata howardi and D. virgifera) 8-10 per plant in scattered corn fields in Texas County. Few fields treated. (OK Coop. Sur.). KANSAS - Adults averaged 14 per plant with heavy root damage in early silking corn field in Linn County week ending July 16. Adults 90 percent NORTHERN CORN ROOTWORM (D. longicornis), remainder D. virgifera and D. undecimpunctata howardi. Unusually heavy for area. Emergence of D. virgifera began in northwest area. Currently, D. virgifera adults averaged 0-3 per corn plant (5 foot to early silk) in several southwest counties. Counts zero to trace in Pratt, Edwards, and Sedgwick Counties, and one per 25 plants in Sedgwick County field. (Bell).

IOWA - Diabrotica virgifera adults emerging across State. Males more abundant than females. More than 25 per corn plant in Carroll and Butler Counties and 10-15 per plant in Sioux County. Cutting silks. Controls applied. No gravid females. (IA Ins. Sur.). WISCONSIN - Diabrotica spp. adults very heavy in some corn in south area. Up to 17 (averaged 5+) per plant in fields with tassels and silks. Most concentrated in tassels and began to move onto silks; some heavy silk feeding in some advanced fields. Mating as far north as Trempealeau County. Moderate leaf feeding where heavily infested with D. virgifera. (WI Pest Sur.).

NEBRASKA - Adults per corn plant by county: Cedar and Antelope 7 D. virgifera and D. longicornis; Pierce 0.5 of both species; Brown and Rock 2 of Diabrotica spp.; York, Hamilton, Hall, Merrick, Fillmore, and Buffalo 0-7; Clay 0.5 of Diabrotica spp. Stand loss 25 percent in field replanted after hail in Dawson County. (Witkowski et al.). MICHIGAN - D. virgifera adults in Branch County July 9, Calhoun and St. Joseph Counties July 12, and in Cass and Clinton Counties July 13. D. virgifera and D. longicornis in Ingham County July 16. Most corn not yet tasseling. (Netherton et al.). OHIO - D. longicornis larvae damaged one node of roots on early planted corn in Wayne County by July 21. Adult emergence increasing. (Szatmari-Goodman). PENNSYLVANIA - First D. longicornis adults in Juniata and Perry Counties. (Shetlar et al.).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Counts on grain sorghum by area: Medina and Uvalde Counties 10 per head common on late-planted sorghum; south-central and Blacklands very heavy. (Stewart et al.). OKLAHOMA - Building up on sorghum in Muskogee and Sequoyah Counties with as many as 50 percent of plants having one adult per head in some fields. Some fields in Sequoyah County treated. Light in Mayes County. (OK Coop. Sur.). ARKANSAS - Light on sorghum in St. Francis County and in one field in Craighead County. Some fields in State past susceptible stage. (Boyer).

SMALL FRUITS

DISEASES

BARLEY YELLOW DWARF VIRUS - NEW YORK - Area of infected oats extended into Hudson Valley and Catskills week ending July 19. Involves nearly all of State. (NY Wkly. Rpt.).

INSECTS

WHEAT STEM MAGGOT (Meromyza americana) - NORTH DAKOTA - Infested less than one up to 7 (averaged 4) percent of small grains in Adams, Grant, and Hettinger Counties. (Brandvik). MONTANA - Caused concern on wheat in east area. (Jensen).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Continued very heavy on grasses and legumes in all counties in Blacklands area. (Hoelscher). Invaded lawns in south-central area. Very heavy in Harris and Brazos Counties. (Cole). OKLAHOMA - Damaged bermudagrass in pastures and lawns in Jefferson, Love, Marshall, Bryan, and Choctaw Counties. (OK Coop. Sur.). KANSAS - Almost entire

fescue pasture destroyed near Elk City, Montgomery County. Spodoptera frugiperda infestation began in part of pasture flooded earlier. Larvae heavy in lawn grasses and along field borders in Montgomery County about 3 miles south of Liberty, area also previously flooded. (Bell).

A BAGWORM (Apterona crenulella) - OREGON - Larvae moderately abundant on crested wheatgrass in a field near Van, Harney County, July 13, 1976. Collected and determined by R.L. Westcott. This is a new county record. (Penrose).

GRASS BUGS (Labops spp.) - UTAH - L. hirtus generally controlled by 16,000-acre grasshopper control program on Cedar Mountain, Iron County, on range grasses. L. hirtus generally infested meadows in this county and in other areas, often in heavy numbers. Worst season of Labops damage to Cedar Mountain grasses. All stages of L. hirtus in Ephraim Canyon, Sanpete County, in wet meadows above 8,000 feet. (Haws). L. utahensis still active and moderately numerous on grasses in south Franklin Basin, Cache County. (Knowlton).

A SCARAB (Ataenius spretulus) - OHIO - Population at one site in Clermont County comprised 11 percent larvae, 36 percent pupae, and 53 percent adults. Averaged 77 (maximum 264) per square foot of turf. Adults collected at white light on evening of July 20. (Wegner).

FORAGE LEGUMES

DISEASES

ZEBRINA LEAF SPOT (Cercospora zebrina) - KANSAS - Seems more widespread on alfalfa. Infection light to heavy, some defoliation in more heavily infected fields. Percent infection (and severity) by county: Riley 60 (moderate), Clay 20 (light), Washington 30 (light), Cloud 90 (light), Ottawa 20 (light), Pottawatomie 80 (heavy), Jefferson 10 (light). (Sim).

POLYGONI POWDERY MILDEW (Erysiphe polygoni) - KANSAS - Still problem in some red clover fields in northwest area. Infection moderate to heavy in about 30 percent of plants in Doniphan County fields. Trace in Jackson County. (Sim).

INSECTS

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) - PENNSYLVANIA - Adults per sweep of alfalfa (and mines per stem) by county: Monroe 4 (4-5) at Eldred and 6-8 (10-12) at Polk July 12; Wayne 5 (1-2) at Damascus July 14. (Sporer).

ALFALFA CATERPILLAR (Colias eurytheme) - WISCONSIN - Larvae readily found on alfalfa in south third of State and northwest and west-central counties. Counts ranged from 2 per 100 sweeps in Walworth County to 2 per sweep in Lafayette County. Larval parasitism about 20 percent in Rock County field. (WI Pest Sur.).

A LYGUS BUG (Lygus hesperus) - CALIFORNIA - Seed alfalfa fields in Imperial County treated to prevent serious losses. Seed alfalfa acreage smaller than usual this year due to high price of hay. (CA Coop. Rpt.).

PEA APHID (Acyrtosiphon pisum) - TEXAS - Light to moderate on alfalfa in El Paso, Hudspeth, Reeves, Pecos, Ward, Ector, and Midland Counties. (Neeb). MINNESOTA - Continued increase on alfalfa past 14 days. Averages per 100 sweeps by district: Southeast 218, south-central 294, southwest 140, east-central 30, central 80, west-central 300, and northwest 3,355. Averaged as many as 120 per sweep in field in northwest district. Most of second cutting underway or completed; approaching cutting stage in northwest district. (MN Pest Rpt.).

SOYBEANS

DISEASES

BACTERIAL PUSTULE (Xanthomonas phaseoli var. sojense) - KANSAS - Most common soybean disease in northeast area. Percent infection by county: Dickinson and Doniphan 30, Pottawatomie 80, Jackson 20, Brown 60. All infections light. (Sim).

SOYBEAN ROOT AND STEM ROT (Phytophthora megasperma var. sojae) - KANSAS - Incidence of this disease and SOYBEAN STEM CANKER (Diaporthe phaseolorum var. caulivora) on soybeans increased in southeast area due to recent rains. Both diseases affected about 5 percent of plants in Osage, Coffey, Woodson, Neosho, and Allen Counties. Trace in Cherokee and Franklin Counties. (Sim).

INSECTS

SOYBEAN LOOPER (Pseudoplusia includens) - ALABAMA - Larvae increased on soybeans statewide; counts on 60 feet of row ranged from 2 in Etowah County up to 60 in Morgan County. Heaviest defoliation at 2 percent in Morgan County. (McQueen).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Defoliated 55-acre field of soybeans in McCurtain County. (OK Coop. Sur.).

LOCUST LEAFMINER (Odontota dorsalis) - MARYLAND - Adults infested soybeans near locust trees in Charles and Prince Georges Counties. Defoliation up to 40 percent in areas closest to trees. (U. Md., Ent. Dept.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Increased on soybeans, counts on 60 feet of row from zero in several counties up to 34 in Monroe County. This pest and other noctuid larvae defoliated 5 percent of 40-acre field in Limestone County. (Wilson et al.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Still increasing on soybeans in south counties, economic in many untreated fields. (U. Md., Ent. Dept.).

PEANUTS

INSECTS

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - ALABAMA - Larvae infested 30 percent of plants at 10 sample sites in 30-acre peanut field and damaged young pods at Wicksburg, Houston County. (Weeks).

GRANULATE CUTWORM (Feltia subterranea) - ALABAMA - Damaging numbers in most peanut fields in Pike County and several fields in Covington County. Larvae averaged 4-5 per 3 feet of row. Controls applied in some fields. (Stephenson et al.).

REDNECKED PEANUTWORM (Stegasta bosqueella) - OKLAHOMA - First of season on Marshall County peanuts July 15. Averaged less than one percent of terminals infested. (OK Coop. Sur.).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Percent punctured cotton squares by area: Rio Grande Valley 0-100 but mostly non-economic, Bell and Falls Counties some "hotspots" with 60-70, Hill and Johnson Counties up to 44 in early planted cotton, Hillsboro up to 25 on cotton beginning to square, Trans-Pecos 2-20. Counts continued to increase in south-central area. Activity light to moderate in isolated Howard County fields. First generation will soon be emerging below Caprock. (Cole et al.). OKLAHOMA - Percent punctured squares by county: Washita and Caddo up to 55; McClain up to 18. Pheromone trap counts for week by county: Harmon 3 in 34 traps, Greer 10 in 25 traps, Jackson 7 in 26 traps. (OK Coop. Sur.). ALABAMA - "Hatchout" light on 90+ percent of cotton in north area. Second "hatchout" approaching in south and central areas with economic levels reached in most fields where controls becoming general. (Freeman et al.). NORTH CAROLINA - Percent punctured cotton squares continued light in Coastal Plain. Less than 5 percent damage in 50 Edgecombe County fields. (Harrell, Robertson).

BOLLWORMS (Heliothis spp.) - TEXAS - BOLLWORM (H. zea) status on cotton by area: South-central eggs increased; Rio Grande Valley heavy in numerous fields at Pharr, San Juan, and Alamo, highs of 50 larvae per 100 plants in few fields, eggs 15-80 per 100 plants, fewer than 5 larvae and 15 eggs per 100 plants in other sites; El Paso, Hudspeth, Pecos, and Reeves Counties light; Howard, Martin, Reagan, Glasscock, and Upton Counties increased. (Deer et al.). OKLAHOMA - H. zea eggs in southwest counties 0-18 (averaged 9) percent in most cotton fields. Damaged squares 0-17 (2-9 in most fields) percent. (OK Coop. Sur.). ARKANSAS - H. zea far outnumbered TOBACCO BUDWORM (H. virescens) in light traps; counts increased. (Boyer). ALABAMA - Heliothis spp. eggs and larvae light on cotton statewide. H. zea adult flights increased July 22 in Macon County with 20 eggs per 100 terminals. Adult flights and egg laying to increase next 10-15 days. (Gilliland et al.). SOUTH CAROLINA - Heliothis spp. eggs heavy on cotton in Calhoun and Sumter Counties, 99 per 100 plants in one Sumter County field. Controls needed. (Douglass).

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) - TEXAS - Light on cotton in Glasscock, Howard, Martin, Reagan, Pecos, Reeves, El Paso, Hudspeth, and Culberson Counties. (Neeb). OKLAHOMA - Counts on cotton by county: Southwest 0-22 per 100 terminals; Washita light. (OK Coop. Sur.).

LYGUS BUGS (*Lygus* spp.) - ALABAMA - TARNISHED PLANT BUG (*L. lineolaris*) adults and nymphs increased sharply on cotton in north area past 10 days as weed hosts matured during 10-15 days of hot, dry weather. Counts per 100 feet of row by county: Madison 20-150, Lawrence 60-200, and Lauderdale 5-90. Control efforts general. (Freeman et al.). SOUTH CAROLINA - *Lygus* spp. moderate on cotton in Sumter and Calhoun Counties. Damage to small squares minor. Controls needed in some cases. (Douglass).

COTTON APHID (*Aphis gossypii*) - ALABAMA - Almost economic in several cotton fields in Macon and Lee Counties. (Williams et al.). OKLAHOMA - Moderate on cotton in Washita County. (OK Coop. Sur.).

TWOSPOTTED SPIDER MITE (*Tetranychus urticae*) - ALABAMA - Continued troublesome on cotton in most north areas, controls poor to good. May become economic in Macon, Lee, and other south counties. (Freeman et al.).

MISCELLANEOUS FIELD CROPS

INSECTS

SUNFLOWER MOTH (*Homoeosoma electellum*) - NORTH DAKOTA - Second-instar larvae damaged early planted sunflowers in Eddy and Stutsman Counties. (Oseto).

CARROT BEETLE (*Bothynus gibbosus*) - TEXAS - Decreased in light traps among sunflowers in South Plains. Now between first and second generation. (Morrison). OKLAHOMA - Light trap counts for week by county: Greer 39 and Tillman 21. (OK Coop. Sur.).

POTATOES, TOMATOES, PEPPERS

DISEASES

EARLY BLIGHT (*Alternaria solani*) - RHODE ISLAND - Problems increasing on garden tomatoes, potatoes, and eggplants in Washington County. (Wallace).

INSECTS

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - UTAH - Large larvae and new adults damaged potatoes and tomatoes; heavy on nightshade at Logan, Cache County. (Davis). NORTH DAKOTA - Larvae up to 28 per potato plant (averaged 5 per 10 sweeps) in Walsh County. Overall damage very light. (Scholl). NEW HAMPSHIRE - Larvae and adults damaged eggplants and tomatoes in south area. (Bowman). INDIANA - Adults and larvae continued serious on potatoes in St. Joseph and Elkhart Counties. (York).

GREEN PEACH APHID (*Myzus persicae*) - WISCONSIN - Counts on pepper plants in Dane County heavy 7 days after treatment. Light on potatoes in Central Sands. (WI Pest Sur.).

BEANS AND PEAS

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Adults and larvae continued increase on snap beans, lima beans, and southern table peas statewide. (Wilkins et al.). OHIO - First central area pupa reported on Franklin County garden beans July 16. New adults July 22. (Davidson, Dowell).

PEA APHID (Acyrtosiphon pisum) - WASHINGTON - This species and BEAN APHID (Aphis fabae) heavily infested about 35,000 acres of lentils in Whitman and Spokane Counties. A. fabae seems more damaging. (O'Keefe et al.).

COLE CROPS

DISEASES

CLUB ROOT (Plasmodiophora brassicae) - WISCONSIN - Severe in some Washington and Ozaukee County cabbage fields. (WI Pest Sur.).

INSECTS

HARLEQUIN BUG (Murgantia histrionica) - OKLAHOMA - Counts by county: Okmulgee, Hughes, Coal, Atoka, and Bryan 10-30 per plant on garden broccoli and cabbage; Tillman moderate on turnips and collards. (OK Coop. Sur.).

CUCURBITS

INSECTS

SQUASH BUG (Anasa tristis) - OKLAHOMA - Heavy on garden squash in Haskell, Johnston, and Washita Counties. (OK Coop. Sur.).

SQUASH VINE BORER (Melittia cucurbitae) - MARYLAND - Heavy on squash in local outbreaks statewide, especially small plantings. (U. Md., Ent. Dept.).

DECIDUOUS FRUITS AND NUTS

INSECTS

REDBANDED LEAFROLLER (Argyrotaenia velutinana) - NEW HAMPSHIRE - Active in apple orchards at Durham, Strafford County. (Bowman).

APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - Emergence progressed. Hot, dry weather seemed to increase fly activity past 14 days. Sticky trap catches by county: Hennepin 123, Scott 18, Brown 8, Rice 3. (MN Pest Rpt.). INDIANA - Two pheromone traps caught 47 adults at Vincennes, Knox County, July 15-22, compared with 43 in previous 7 days. (Reed).

PEAR PSYLLA (Psylla pyricola) - COLORADO - Nymphs and adults in several Mesa County deciduous fruit orchards. Up to 15 per beat in some unsprayed blocks. Light in commercial orchards, adults 0-2 per 10 beats. (Bulla).

MCDANIEL SPIDER MITE (Tetranychus mcdanieli) - UTAH - Mites, mainly this species, increased rapidly in apple orchards at Roy, Weber County, and Farmington, Davis County. (Davis).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Heavy on pecan trees in Pontotoc County. Moderate on pecan and walnut in Mayes County. (OK Coop. Sur.).

BLACKMARGINED APHID (Monellia costalis) - OKLAHOMA - Very heavy on Comanche County pecan trees week of July 16. Increasing in Love County. (OK Coop. Sur.).

SMALL FRUITS

INSECTS

WHITEMARKED TUSsock MOTH (Orgyia leucostigma) - MONTANA - Larvae severely damaged leaves on raspberries and trees near Townsend, Broadwater County. (Jensen).

CRANBERRY WEEVIL (Anthonomus musculus) - MASSACHUSETTS - Adults still very heavy; actively fed on small berries and terminal growth in Plymouth County. (Tomlinson).

TARNISHED PLANT BUG (Lygus lineolaris) - NEW HAMPSHIRE - Heavy on developing raspberry fruit in southeast area. (Bowman).

ORNAMENTALS

DISEASES

FIRE BLIGHT (Erwinia amylovora) - RHODE ISLAND - Many problems in landscape plants related to apple and especially hawthorn trees in Kent County. (Larmie).

INSECTS

A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) - MARYLAND - Notching on azaleas and privet heavy statewide. (U. Md., Ent. Dept.).

TULIPTREE SCALE (Toumeyella liriodendri) - ALABAMA - Collected on Japanese magnolia at Andalusia, Covington County, by W.N. Stephenson, March 17, 1976. Determined by M.L. Williams. This is a new county record. (McQueen).

AN ARMORED SCALE (Pseudaulacaspis cockerelli) - ALABAMA - Collected on Michelia fuscata (bananashrub) at Ozark, Dade County, by W.N. Stephenson, March 22, 1976. Determined by M.L. Williams. This is a new county record. (McQueen).

ELM SAWFLY (Cimbex americana) - MONTANA - Larvae severely defoliated Siberian elms at Brockway, McCone County. (Jensen).

CHRYSANTHEMUM THRIPS (Thrips nigropilosus) - MASSACHUSETTS - Very severe outbreak reported on greenhouse gloxinia in eastern areas. Extensive damage to foliage. (Gentile).

BLACK VINE WEEVIL (Otiorhynchus sulcatus) - OHIO - Hatch underway in northeast area July 22, many eggs laid. (Nielsen, Dunlap).

WISCONSIN - Adults on yew in Ozaukee County July 7. First report in several years in this area. (WI Pest Sur.).

FOREST AND SHADE TREES

DISEASES

LOPHODERMIIUM NEDDLECAST (Lophodermium pinastri) - WISCONSIN - Infection period began. (WI Pest Sur.).

DUTCH ELM DISEASE (Ceratocystis ulmi) - See this disease under Federal and State Programs.

INSECTS

PINE NEEDLE SHEATHMINER (Zelleria haimbachi) - OREGON - Severe defoliation to ornamental plantings of lodgepole pine and occasionally to Scotch and Austrian pine in many Multnomah County areas. Adults first emerged July 23. (Larson).

LILAC BORER (Podosesia syringae) - UTAH - Damage severe to ash trees in downtown Salt Lake City, Salt Lake County. (Roberts et al.).

MOUNTAIN ASH SAWFLY (Pristiphora geniculata) - NEW HAMPSHIRE - Very heavy on mountain ash on lower slopes of Mount Washington in Coos County. About 10-15 per leaf July 16. (Reeves et al.).

A SPIDER MITE (Eotetranychus multigituli) - OHIO - Yellowed honeylocust leaves widespread. Severe damage in entire block of nursery plants in Franklin County. (Betsch, Lewis).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - OKLAHOMA - Moderate on cattle in Craig and Comanche Counties week of July 16. Currently 250-500 per head on cattle in Mayes County. (OK Coop. Sur.). NEBRASKA - Averaged 500+ per head on untreated cattle throughout southwest district. (Campbell). INDIANA - Seemed lighter on 4 Herefords in

Warren County than previous period, still 100+ per animal. (Harris). KENTUCKY - Means per side in Harrison County: 183 on 10 untreated, mixed breed cows, 7.3 on 10 calves, none on 10 treated mixed breed steers. (Christensen). ALABAMA - Increased on cattle in south, central, and north areas past 15 days from average of 100 to 500+ per untreated head. (Murphy et al.).

FACE FLY (Musca autumnalis) - OKLAHOMA - Heavy on Craig County cattle week of July 16. Currently up to 20 per head on cattle in Mayes County. (OK Coop. Sur.). NEBRASKA - Averaged 10 per face on untreated cattle in Dawson, Lincoln, and Keith Counties. (Campbell). INDIANA - Adults averaged about 30 per face on 3 Hereford heifers and numbered 17 on steer in Warren County herd, similar to previous 7 days. (Harris). KENTUCKY - Means per head in Harrison County: 31 on 10 untreated mixed breed cows, 9 on 10 calves, 19 on 10 treated mixed breed steers. (Christensen). ALABAMA - Heavy and damaging in Lauderdale County week ending July 16, ranged 2-20 per head on many cattle. Pinkeye widespread. (Halla et al.). Adults collected on farm at Birmingham, Jefferson County, by G. Smith, April 19, 1976. This is a new county record. Determined by R.J. Gagne. (McQueen).

STABLE FLY (Stomoxys calcitrans) - NEBRASKA - Averaged 15 per leg on untreated cattle in Dawson, Lincoln, and Keith Counties. (Campbell). NEW HAMPSHIRE - Very heavy in horse barns at Dover, Strafford County. Controls required. (Burger).

HORSE BOT FLY (Gasterophilus intestinalis) - OHIO - Infested 90+ percent of horses received for autopsy from all parts of State. One 3-year-old mare from Vinton County contained 300-500 third instar larvae, heavier than any infestation observed at this time in 1975. Second instar larvae now found on white-lined area of stomachs. Clusters of THROAT BOT FLY (G. nasalis) less common. (Fox).

A TABANID FLY (Tabanus quinquevittatus) - NEW HAMPSHIRE - Becoming very heavy on livestock at Durham and Dover, Strafford County. Canopy traps collected 100 females at Durham and 58 at Dover. (Burger).

MOSQUITOES - MINNESOTA - Trap catches July 10-16 indicate Aedes vexans increased while Coquillettidia perturbans decreased from previous week. Bite ratings in descending order: C. perturbans, A. vexans, and A. stimulans. (MN Pest Rpt.). OHIO - Mosquito adults 12.6 per light trap per night at Columbus, Franklin County, mostly Culex spp. (Berry). MARYLAND - A. vexans larvae and pupae very heavy in Chesapeake and Ohio Canal at Monacacy Aqueduct, Montgomery County. (U. Md., Ent. Dept.).

GULF COAST TICK (Amblyomma maculatum) - TEXAS - Increased on cattle at Uvalde. Heaviest in Dimmit and La Salle Counties and south into Rio Grande Valley. (Stewart).

EAR TICK (Otobius megnini) - TEXAS - Heavy on cattle in Brazos County. (Cole).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

A EULOPHID WASP (Tetrastichus julis) - PENNSYLVANIA - Adults recovered from Oulema melanopus (cereal leaf beetle) larvae collected from oats in Centre Township, Green County, on June 22, 1976. Collected by M. Garra. Determined by V. Montgomery. This is a new county record. (Kim). Adults recovered from cereal leaf beetle collected on oats in Mineral Township, Venango County, on July 23 and in Ferguson Township, Centre County, on July 8. (Shiner, Albright).

AN ICHNEUMONID WASP (Lemophagus curtus) - PENNSYLVANIA - Adults recovered from Oulema melanopus (cereal leaf beetle) larvae in South Huntingdon Township, Westmoreland County, June 17. Determined by V. Montgomery. (Garra).

AN APHIDIID WASP (Lysiphlebus testaceipes) - KANSAS - Trace parasitism of Schizaphis graminum (greenbug) in Grant County sorghum field. (Bell). NEBRASKA - Parasitism of greenbug averaged less than one percent in 17 sorghum fields in Clay, York, Merrick, Hall, and Hamilton Counties. (Woolsey, Raun).

A PUNCTUREVINE SEED WEEVIL (Microlarinus lareynii) - OKLAHOMA - Light in puncturevine seed at Chester, Major County, June 15, 1976. Collected and determined by D.C. Arnold. This is a new county record. (OK Coop. Sur.).

A COLEOPHORID MOTH (Coleophora parthenica) - CALIFORNIA - Another release made on Halogeton glomeratus (halogeton) infestations in Lassen County. Emergence 100 percent from release made in February. Due to drought, halogeton populations at lower level than previously. (CA Coop. Rpt.).

A TEPHRITID FLY (Urophora affinis) - CALIFORNIA - About 400 adults released along Trinity River, Trinity County, to control Centaurea diffusa (diffuse knapweed). (CA Coop. Rpt.).

A TEPHRITID FLY (Urophora sirunaseva) - CALIFORNIA - Released at 2 sites in Placer County against Centaurea solstitialis (yellow starthistle). (CA Coop. Rpt.).

FEDERAL AND STATE PROGRAMS

DISEASES

BLACK STEM RUST (Puccinia graminis var. tritici) - PENNSYLVANIA - Observations made in 36 counties. Rust in 3 Adams County wheat fields averaged 55 percent prevalence and 5 percent severity. Rust in Crawford County barley field at 8 percent prevalence and trace severity. No economic rust damage forecast for State. (Wagner, Palisin).

DUTCH ELM DISEASE (Ceratocystis ulmi) - CALIFORNIA - Collected from elm at Ross, Marin County, by Hiroshima (initials unknown) and P. Economom, June 3, 1976. Determined by P. Hiatt. This is a new county record. (CA Coop. Rpt.).

INSECTS

CEREAL LEAF BEETLE (*Oulema melanopus*) - PENNSYLVANIA - Summer adults lightly damaged corn in Cumberland, Franklin, and Lebanon Counties. (Garra et al.).

GYPSY MOTH (*Lymantria dispar*) - PENNSYLVANIA - Pupation in Wayne and Pike Counties July 16. Few females laying eggs. Traces of virus in both counties. (Sporer). MASSACHUSETTS - Egg laying began in west areas. (Rose).

JAPANESE BEETLE (*Popillia japonica*) - ALABAMA - Adults emerged at Heflin, Cleburne County, July 2. (Thompson). GEORGIA - Light to moderate in Walton, Barrow, and Madison Counties week ending July 17; no treatments needed in most cases. (Bowers et al.). PENNSYLVANIA - Damage light to moderate on corn leaves and silks. (Shetlar et al.). NEW HAMPSHIRE - Adults heavy in Hillsborough County and at Dover, Strafford County. (Bowman, Burger).

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - CALIFORNIA - Program at Culver City, Los Angeles County, nearing end. Sterile releases discontinued several weeks ago. Sterile fly catches decreasing markedly each week. All flies sterile to date. Fruit collection continues and all rearings negative. (CA Coop. Rpt.).

RANGE CATERPILLAR (*Hemileuca oliviae*) - OKLAHOMA - Larvae in new areas of Cimarron County week of July 16. Includes one area south of Boise City, about 30 miles from New Mexico State line. Range-land infestations in this county July 14-21 involved 48 sections on 30,720 acres. Outside boundary of infested area in Cimarron County involves 437,760 acres. Easternmost infestation is 36 miles from New Mexico State line. Most infested areas averaged less than one per square yard but ranged 2-7 per square yard in isolated "hotspots." (OK Coop. Sur.).

SCREWWORM (*Cochliomyia hominivorax*) - Total of 408 cases reported from continental U.S. July 4-10 as follows: Texas 405, New Mexico one, Arizona 2. Total of 368 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 274 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 129,735,600 as follows: Texas 102,474,600; New Mexico 7,551,000; Arizona 19,710,000. Total of 6,210,000 sterile flies released within Barrier of Mexico. (Vet. Serv.).

WHITEFRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Adults per 60 feet of row, 4-6 on soybean leaves in Mobile and Houston Counties and 3 on corn in Houston County field. (Lockhart, Stephenson). GEORGIA - Heavy, damaged Sumter County peanut foliage week ending July 17. Heavy in Spalding County soybean field, feeding mostly on *Cassia Obtusifolia* (sicklepod). (Tippins).

WEEDS

COMMON CRUPINA (*Crupina vulgaris*) - CALIFORNIA - Collected from golf course and pasture at Santa Rosa, Sonoma County, by K. Stocking, June 27, 1976. Infestations total 0.1 acre in 2.0-acre area. Determined by T. Fuller and W.M. Lowary. This is a new State record. Eradication scheduled soon. (CA Coop. Rpt.).

DALMATIAN TOADFLAX (Linaria dalmatica) - CALIFORNIA - Small infestation at Dixon, Solano County. Collected by W. Ferlatte and R. Peterson, July 12, 1976. Determined by D. Barbe. This is a new county record. Eradication treatment will be initiated soon. (CA Coop. Rpt.).

DIFFUSE KNAPWEED (Centaurea diffusa) - CALIFORNIA - Two specimens located along State Highway 49 near the Madera and Mariposa County lines July 14, 1976. Collected and determined by T. Fuller. This is a new county record for Mariposa County and major extension southward from northern counties. Eradication procedures will be initiated. (CA Coop. Rpt.).

HAWAII PEST REPORT

General Vegetables - LEAFMINER FLIES (Liriomyza spp.) counts and damage heavy in acre of yard-long beans (90 percent of leaves; 30 mines per leaf) at Kahaluu, Oahu, and moderate in 3 acres of tomatoes at Pulehu, Maui, and in acre of green onions (30 percent of leaves heavily mined at Waianae, Oahu. Light in 2 acres of mustard cabbage, one acre of pumpkins, and 0.25 acre of hyotan at Lualualei, Oahu, and in 0.5 acre of tomatoes at Waianae and Kahaluu. (Ah Sam et al.). GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) counts moderate and damage light in acre of eggplants (30 percent of leaves with large nymphal colonies) at Waianae. Light in 0.25 acre of hyotan at Waianae, on garden eggplant at Kahaluu, and 2.5 acres of tomatoes at Waianae, Kahaluu, and Pulehu. Severe in abandoned acre of tomatoes at Pulehu. (Chun et al.) TOMATO PINWORM (Keiferia lycopersicella) counts and damage moderate in acre of eggplants (60 percent of leaves; 1-12 larvae per leaf) at Waianae. Light (5-15 percent of leaves) in 0.5 acre of tomatoes at Waianae and yard planting at Ewa, Oahu. (Kumashiro et al.). DIAMONDBACK MOTH (Plutella xylostella) and CABBAGE WEBWORM (Hellula rogatalis) counts and damage light to moderate in 2 acres of mustard cabbage at Lualualei. About 30-50 percent of plants in 0.5 acre section moderately infested (1-4 larvae per plant) by diamondback moth and 60 percent of 0.25 acre of young plants infested (one larva per plant) by webworms. This webworm light on 1.5 acres of daikon and 0.25 acre each of mustard cabbage and white stem cabbage at Waianae. TOBACCO FLEA BEETLE (Epitrix hirtipennis) moderate in 0.25 acre of eggplants (75 percent of plants; 5-10 adults per plant) at Waianae. Damage light. (Chun, L. Nakahara).

Ornamentals - WESTERN FLOWER THRIPS (Frankliniella occidentalis) counts and damage heavy on chrysanthemum blossoms in 0.25 acre at Lualualei. (Chun, L. Nakahara).

Turf and Pasture - Adults of a BILLBUG (Sphenophorus venatus vestitus) heavy and larval damage light on lawn grass at Kahului, Maui. (Miyahira).

DETECTION

NEW STATE RECORDS

WEEDS

COMMON CRUPINA (Crupina vulgaris) - CALIFORNIA - Sonoma County.
(p. 467).

NEW COUNTY RECORDS

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - CALIFORNIA - Marin (p. 466).

INSECTS

AN ARMORED SCALE (Pseudaulacaspis cockerelli) - ALABAMA - Dade
(p. 464).

A BAGWORM (Apterona crenulella) - OREGON - Harney (p. 458).

A EULOPHID WASP (Tetrastichus julis) - PENNSYLVANIA - Green
(p. 466).

FACE FLY (Musca autumnalis) - ALABAMA - Jefferson (p. 465).

A PUNCTUREVINE SEED WEEVIL (Microlarinus lareynii) - OKLAHOMA -
Major (p. 466).

TULIPTREE SCALE (Toumeyella liriodendri) - ALABAMA - Covington
(p. 464).

WEEDS

DALMATIAN TOADFLAX (Linaria dalmatica) - CALIFORNIA - Solano
(p. 468).

DIFFUSE KNAPWEED (Centaurea diffusa) - CALIFORNIA - Mariposa
(p. 468).

CORRECTIONS

CPPR 1(29):434 - BACTERIAL BLIGHT (*Pseudomonas syringae*) ...
should read SOYBEAN BACTERIAL BLIGHT (*Pseudomonas glycinea*) ...
(PPQ).

LIGHT TRAP COLLECTIONS

[illegible]

[illegible][illegible]

Plant Importation and Technical
Support Staff

The following is a list of exotic plant pests which quarantine authorities have recently prevented from entering the United States.

<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Desti- nation</u>
<u>Uredo sp. near ficina Juel.</u> <u>a rust</u>	uredial on leaves of 500 <u>Ficus</u> sp. plants	Miami	Guatemala	FL
<u>Chilo suppressalis (Walker)</u> <u>asiatic rice borer</u>	adult with 66 boxes of rice straw baskets	Los Angeles	Korea	CA
<u>Neolasioptera sp.</u> <u>a cecidomyiid fly</u>	larval in root galls of 100 bromeliad plants	San Francisco	Guatemala	CA
<u>Platypus cylindrus Fabricius</u> <u>a platypodid beetle</u>	adult in 1 oak log	New Orleans	England	LA
<u>Sirex noctilio Fabricius</u> <u>a siricid wasp</u>	adult in wood bracing with machinery	Charleston	Italy	SC
<u>Tomiscus piniperda (Linnaeus)</u> <u>a scolytid beetle</u>	adult under bark on 17 wood cases of cargo	New York	Poland	USA
<u>Helicella maritima (Draparnaud)</u> <u>a snail</u>	adult with 11 boxes of household goods	Houston	Greece	TX
<u>Limacolaria numidica (Reeve)</u> <u>a snail</u>	juvenile with 22 cartons of Ananas sp. cuttings	Kennedy Airport NY	Ivory Coast	FL

^{1/} Initiated by M. J. Shannon, National Program Planning Staff

WEATHER OF THE WEEK ENDING JULY 25

Reprinted from Weekly Weather and Crop Bulletin Supplied by National Weather Service, NOAA.

HIGHLIGHTS: Thunderstorms ravaged the Nation during the week and unleashed rains, hail, and high winds over the land. Rain which unnudated parts of Indiana, Iowa, Pennsylvania, and Texas resulted in extensive flooding. Wisconsin and Minnesota received appreciable amounts of rain which helped curb the dry spell in that area. Above normal readings broke or matched previous record highs in North Carolina and the Dakotas, while a high pressure center produced record low temperatures in New Hampshire and Pennsylvania.

TEMPERATURE AND PRECIPITATION: Early Monday morning, temperatures dropped below normal in the lower Mississippi Valley and the central gulf coast, but the mercury climbed to a high of 102 degrees in Huron, South Dakota. Showers and thundershowers descended on an area from the upper Mississippi Valley to the central Plains along the southern Atlantic coast and into the northern Rockies and southern Plateau region. Generally clear skies lingered over the interior of California, the Pacific Northwest, and much of Nevada. As the day evolved a Canadian cold front set off numerous heavy thunderstorms across the northern Plains, northern Mississippi Valley and the western Great Lakes region. Wind gusts up to 80 m.p.h. Pummelled Hettinger, North Dakota, while Miles City, Montana, and International Falls, Minnesota, both clocked winds of more than 60 m.p.h. Golf-ball sized hail pelted areas north and east of Langdon, North Dakota, while 3.5-4 inches of rain deluged Walhalla, North Dakota,

Warm humid air and hazy skies veiled the mid-Atlantic coast region into the central Appalachians, southwest Pennsylvania, and northern West Virginia posted an air stagnation advisory in the afternoon. Although heavy rains stopped in Texas, waterways persisted in overflow activity. Thunderstorms in the western Great Plains, Rockies, and southern Plateau dominated the weather picture on Tuesday. Haze and some smoke shrouded most of the eastern Gulf Coast States, the southern and central Appalachians and much of the Ohio Valley region. California, Nevada, and the central Gulf Coast States basked in sunshine, and fair skies prevailed over New England. A high pressure system spread cool air and reduced temperatures more than 15 degrees through the northern and central Plains. Showers and thundershowers developed along the moving edge of cooler air. A midafternoon line of heavy thunderstorms stretched from southern Lake Huron, across southern Michigan into Illinois, and through Iowa, Nebraska, and Kansas. Roca, Nebraska, accumulated over 0.5 inch of rain in just 30 minutes. Showers and thunderstorms moved from New England to the central Plains early Wednesday. Thunderstorms unleashed heavy rains over northern Indiana to northwest Pennsylvania. South Bend, Indiana, measured 1.5 inches in one hour. Many streets closed because of flood activity. Minor flooding existed in northwest Pennsylvania throughout the day.

Rain besieged central Iowa and Texas. Des Moines, Iowa, amassed around 5.5 inches of rain in 4 hours. Thunderstorms with heavy rains lingered over the Nation's middle States on Thursday. Extreme southern California, Washington, and western North Dakota also experienced showers and thundershowers. Cooler, less humid air pushed through the Dakotas in the afternoon while hot, humid air massed in the central Gulf Coast States. Ralston, Iowa, reported 5.7 inches of rain in a 2-hour period. Rain-drenched Texas collected about 1.5 inches. Winds buffeted Columbus, Nebraska, with 75 m.p.h. gusts while marble-sized hail pelted the community. Scattered thundershowers covered most of the Great Lakes area, the upper Ohio Valley, northern and southern Atlantic Coastal States, and the gulf coast into southern New Mexico. Hot and humid described the weather picture over most of the Nation on Friday. As the day passed, thunderstorms increased in the Ohio Valley. Although thunderstorms diminished in the Northeast over the weekend, a cold front triggered heavy rain in parts of Maine and New Hampshire. Mercuries on Saturday shot well above the 90-degree mark, and set record highs of 100 degrees in Raleigh, North Carolina, 105 degrees in Bismarck, North Dakota, 108 degrees in Miles City, Montana, and Red Bluff, California, carried the Nation's high of 109 degrees. Late in the afternoon, intense thunderstorm activity hit Kingman, Arizona, with winds estimated at 80 m.p.h. and heavy rain. Sunday found limited precipitation across the Nation and temperatures plunged to a record low of 64 degrees in Midland, Texas, and Lake Charles, Louisiana. Thunderstorms dotted the West. Two inches of hail blanketed the ground near Richfield, Utah, while heavy rains overflowed waterways in the Panguith and Cove Fort areas of Utah. A high pressure center delivered cooler air to the Northeast, and temperatures plummeted to record lows of 44 degrees in Concord, New Hampshire, and 52 degrees in Erie, Pennsylvania.

UNITED STATES DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service
Hyattsville, Maryland 20782

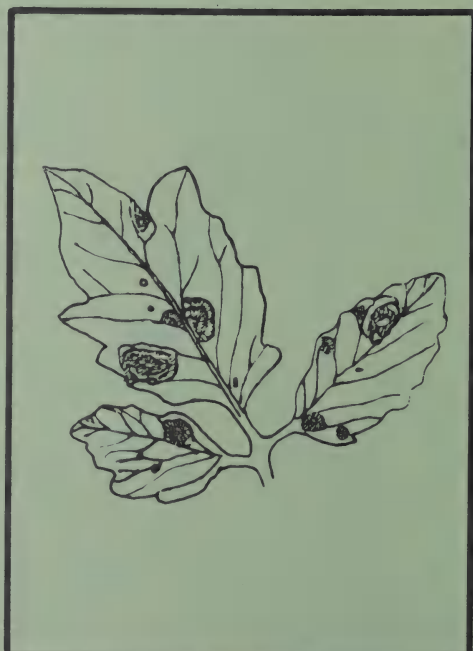
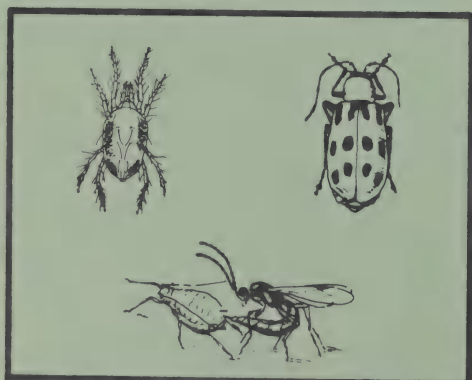
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Cooperative PLANT PEST REPORT

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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
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COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

GREENBUG very severe on sorghum in parts of east Texas, severe in northwest and west-central Kansas, and increasing in east Nebraska. (p. 478).

POTATO LEAFHOPPER one or more per sweep on alfalfa in Pennsylvania, alfalfa in east-central and south-central Missouri, and on beans in Central Sands, Wisconsin. (p. 478).

MAIZE DWARF MOSAIC VIRUS widespread on corn in northwest Kansas and sorghum in north-central and northwest sections. (p. 479).

Second generation of EUROPEAN CORN BORER laying eggs on corn in Nebraska and flying in Illinois, Wisconsin, New York, and Massachusetts. Flight peaked in Delaware. (p. 479).

CORN ROOTWORM adults heavy on corn in northeast Colorado, north-east and east-central Kansas, and south and west Wisconsin. (p. 480).

FALL ARMYWORM heavy on grasses in central Texas and different parts of Mississippi. (p. 481).

PHYTOPHTHORA LATE BLIGHT outbreak on potatoes in northwest New York. (p. 485).

First report of PINK BOLLWORM for year from Texas. (p. 491).

In CPFR 1(30):451, "Only nonsterile MEDITERRANEAN FRUIT FLIES ..." should be "Only sterile MEDITERRANEAN FRUIT FLIES trapped in California to date ..."

Detection

New State records include an ERIOCOCCID SCALE and a MEALYBUG in Alabama (p. 487) and a NOCTUID MOTH in West Virginia. (p. 493).

A TENUIPALPID MITE in Florida (p. 487) and a FLESH FLY in New Mexico (p. 490) are on new hosts.

New county records are on page 493.

Reports in this issue are for the week ending July 30, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

DISEASES

CURLY TOP VIRUS - CALIFORNIA - Intensive crop damage survey completed from Merced County to Red Bluff, Shasta County. Infection light in all areas, but more prevalent than in 1975 in far north. Percent infection: 2 in few sugar beet fields and less than one in 2 tomato fields. Sugar beet tonnage loss in infected fields will be minimal due to harvest beginning August 8. Viral damage light in lower San Joaquin Valley and inland coastal valleys. Harvest of susceptible crops well underway. (CA Coop. Rpt.). See **BET LEAFHOPPER** under this section.

INSECTS

ARMYWORM (*Pseudaletia unipuncta*) - KANSAS - Defoliated scattered fields of grassy corn in Barton, Pawnee, and Edwards Counties. Some treatments applied. (Bell). **NEBRASKA** - Common on grassy corn throughout east and south halves of State. All larval instars moved into corn in Hall and Merrick Counties. Larvae up to 8 per plant and 4 of 160 fields surveyed recommended for treatment. Larvae stripped lower leaves and fed on silks and ear tips in these fields. (Raun). First and second instar larvae up to 24 per square foot in grassy corn in Antelope and Pierce Counties; 6 fields probably need controls soon. (Koinzan). Grassy corn fields in Knox, Perkins, Clay, and Lincoln Counties and surrounding areas treated or will be soon. (Witkowski et al.). **OHIO** - Damaged about 10,000 chrysanthemums per week in Jefferson County greenhouse by July 23. Controls to date not effective. (Simeral). **MASSACHUSETTS** - Largest adult flight in 20 years in Berkshire County. (Treat, Boyce).

BET LEAFHOPPER (*Circulifer tenellus*) - CALIFORNIA - Light in all areas from Merced County to Red Bluff, Shasta County. Counts heavier than in previous few years on crops and weeds in lower San Joaquin Valley and inland coastal valleys. Nymphs and adults heavy on weeds in several west areas. (CA Coop. Rpt.). See **CURLY TOP VIRUS** under this section.

CORN EAWORM (*Heliothis zea*) - TEXAS - Larvae per sorghum head by county: Mills up to 6; Kaufman and Collin feeding but noneconomic; Coleman and Runnels averaged 2; Mitchell, McCulloch, Schleicher, and Coke moderate to heavy. (Wilson et al.). **ALABAMA** - Larvae on 60 feet of row of corn by county: Shelby 3, Monroe 4, Tuscaloosa 2, Morgan 14, Etowah 3, Conecuh 30, Sumter 50. (McQueen). **NORTH CAROLINA** - Adults averaged about 10 per night in Northampton and Halifax County light traps July 21-26. Some increased individual trap catches revealed that egg laying flight continues. (Harrell et al.). **NEW YORK** - First adult of season July 16 in Suffolk County. (Semel).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEVADA - Generally light on sorghum in Pahrangat Valley, Panaca, and Carp, Lincoln County, except for 150 acres at Carp with heavy, spotted infestations of up to 500+ aphids per leaf. Syrphid and lacewing larvae present and lady beetle adults moving into this field. (Bradfield et al.). **TEXAS** - Counts on grain sorghum by county: High Plains generally decreasing; Glasscock, Reagan, Pecos, Reeves, and Hudspeth moderate to heavy in isolated fields; panhandle general decline.

(Patrick et al.). KANSAS - Rhopalosiphum maidis heavy in scattered sorghum fields in Butler and Thomas Counties. (Bell). MISSOURI - Light on 6 to 8-leaf sorghum in central area, infested average of 12-15 percent week ending July 24. (Thomas). WISCONSIN - Appeared recently in southwest counties, increased in central counties particularly in later sweet corn. Very few fields with colonies of 500+ on more than 6 percent of plants. (WI Pest Sur.). NEW HAMPSHIRE - Increased rapidly on corn in south area but no significant injury yet. (Bowman).

GREENBUG (Schizaphis graminum) - TEXAS - Killed some sorghum in Collin and Kaufman Counties, usually in less than one percent of field. Counts on sorghum by area: High Plains economic threshold in many fields, El Paso Valley 1-2 in whorl, southern Rolling Plains increased in many fields where moisture adequate. Counts per sorghum plant by county: Knox very heavy infestations caused extensive damage where controls not applied, 3,000-4,000 per plant in more heavily infested fields; Jones and Fisher 1,000 in some fields; Moore 400-1,500; Hutchinson 0-250; Dallam 0-200; Deaf Smith 0-200; Donley 0-50; Pecos, Reeves, and Hudspeth moderate to heavy. (Turney et al.).

KANSAS - Greenbug counts threatening to economic and increasing rapidly in many sorghum fields in Republic, Jewell, Smith, Rooks, Scott, and Finney Counties. Counts per sorghum plant by area: Southwest increased rapidly in scattered fields, northwest and west-central generally 30-40, up to 200 noted, and increasing; Brown, Nemaha, Pottawatomie, Marshall, Washington, Douglas, and Shawnee Counties and southeast generally light. (Bell). NEBRASKA - Still increased in east half of State. Some fields in northeast district required treatment. (Witkowski). Averaged 881 per plant on untreated susceptible sorghum at site in Clay County; variable on untreated resistant sorghum, highest count of 554 per plant. Little or no visible damage on resistant varieties. Flight on July 23. (Peters). MISSOURI - Very lightly infested 66 percent of 2 sorghum fields in central area week ending July 24. (Thomas). Currently light on sorghum ready to head in central and south-central areas. (Munson).

POTATO LEAFHOPPER (Empoasca fabae) - KENTUCKY - Means of adults per sweep (and of nymphs per stem) on alfalfa in Warren County: 4 (2.75) on 33-inch second growth, 0.2 (0.25) on 4.35-inch third growth, 0.44 (0.15) on 12.0-inch third growth. (Christensen). OHIO - Adult averages per 100 sweeps of third-growth alfalfa by county: Clinton 146, Fayette 94, Brown 50. (Lewis). PENNSYLVANIA - Averages per sweep (and damage) of second-growth alfalfa by county: Centre 4.8, 2.0; Clinton 0.4, 7.2 (yellowing 5 percent); Bradford 1.5, 1.0, Butler 0.5, 0.8 (trace) and 0.7, 0.9 (yellowing 5 percent); Huntingdon 2.6; Snyder 0.5, 10.5 (yellowing 15 percent); Union 2.2. (Shetlar et al.). NEW YORK - Infested many commercial fruit orchards in Wayne County week ending July 26. (Tette). MISSOURI - Counts per 10 sweeps of alfalfa by area: East-central 12-33, south-central 28-55. Plants yellowed in upland fields. (Munson). WISCONSIN - Averaged one per sweep, large increase since last period, on snap beans in Central Sands. Ranged 0-20 per 50 sweeps in west-central area. Stable, mostly 4-15 per 50 sweeps of potatoes in the Central Sands, Langlade County, and Spring Green area. "Hopperburn" on garden potatoes in Dane and Wood Counties. (WI Pest Sur.).

TOMATO HORNWORM (*Manduca quinquemaculata*) - TEXAS - Infested tomatoes at Amarillo, Potter County. (Patrick). MASSACHUSETTS - Larvae began to appear on tomatoes in Middlesex County. (Garland).

CORN, SORGHUM, SUGARCANE

DISEASES

MAIZE DWARF MOSAIC VIRUS - KANSAS - Generally light but appears most widespread corn disease in northwest area. Percent of infected plants in fields surveyed by county: Osborne 10, Smith trace, Cheyenne trace, Wallace trace, Brown trace, Neosho 80. Problems in Phillips and Rooks Counties. Most widespread sorghum disease in north-central and northwest areas. Percent of infection in fields surveyed by county: Mitchell trace, Osborne 3, Rooks trace, Cheyenne trace, Lane 2, Ness trace, and Barton 5. (Sim).

COMMON SMUT (*Ustilago maydis*) - KANSAS - Trace to 80 percent on corn in Cheyenne County. More severely infected fields had hail damage earlier this season. Trace in Brown County. (Sim).

INSECTS

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - MISSOURI - Egg masses per 100 corn plants by area: Central 0-20 (averaged 2.9 and 1.1) and south-central 0-32. (Munson et al.). NEBRASKA - Second-brood egg laying on corn underway in York, Buffalo, Hall, and Merrick Counties with up to 7 fresh egg masses per 100 plants. (Raun). Second brood infested 20 percent of one of 5 fields checked in Rock and Brown Counties. (Bush). Flights of second-brood moths increased in northeast district; 50 percent of egg laying should occur by August 9. (Witkowski). ILLINOIS - Average level of infestation heaviest in west district at 15.7 percent. Infestation overall light. Development by area: Extreme north - 80 percent of mostly fifth instar larvae; south half to two-thirds - 66 percent pupae and 14 percent empty pupal cases. Occasional adults flying in south area. (IL Pest Sur.). WISCONSIN - Second adult flight began at most central and western blacklight trapping sites, may have been few days earlier in extreme southern counties. Egg laying should begin soon. (WI Pest Sur.).

DELAWARE - Flights of second-brood European corn borers peaked about July 21 in Sussex County. Second and third instar larvae on silks and ear tips of irrigated field corn. Current adults light, averaged 2-3 per night in blacklight traps in most areas week ending July 23. (Kelsey). PENNSYLVANIA - Second-generation larvae still active. Caused some corn tassels to drop and some ear and stalk damage. Larvae per 20 plants by county: Erie 5 and 10, Juniata 0 and 4, Lancaster trace, Lebanon trace, Perry trace, 5, 6, and 8. (Maxwell, Palisin). NEW YORK - Second-brood flight indicated by blacklights in Suffolk County July 16 and Tompkins County week ending July 26. (Semel, Willson). MASSACHUSETTS - Second brood well underway and egg laying in progress in Plymouth County. Much harvested corn heavily infested with first generation borers. (Marini). NEW HAMPSHIRE - Adults of first summer generation emerged on corn in south area. Larvae and pupae abundant in inadequately treated sweet corn statewide. (Turmel, Bowman). MAINE - Larvae up to the sixth instar on 5-7 percent of corn on leaves and tassels in central area. (Gall).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Second generation in many corn fields in Hale County. First major egg laying in fields with heavy first generation. Egg masses on up to 40 percent of plants. Second generation active in some fields in Texas Panhandle. Development erratic. (Jackman).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - KANSAS - Egg laying continued in infested Finney County area. Eggs on 0-50 and larvae 0-70 percent of plants. Eggs generally trace on corn in Cheyenne, Rawlins, Wichita, Wallace, Greeley, and Scott Counties. (Bell). NEBRASKA - Egg masses on 16 percent of corn field in early pollination stage in Hall County and 16-23 percent of plants in 11 of 70 fields in Dundy County. Controls recommended. (Koinzan).

CORN ROOTWORMS (Diabrotica spp.) - COLORADO - WESTERN CORN ROOTWORM (D. virgifera) damage heavy to some treated corn fields. Resistance suspected. Up to 10 adults per plant in Weld County. (Hantsbarger). KANSAS - Some heavy infestations, mostly D. virgifera adults, feeding on corn silks in Brown, Doniphan, Douglas, Chase, and Thomas Counties. Generally light in northwest and west-central districts. (Bell). NEBRASKA - Diabrotica spp. adults moderate in 230 fields of corn surveyed in Buffalo, York, Hall, and Merrick Counties. Adult averages ranged 0.10-4.0 per plant; some silk clipping. About 2 percent of emerged females with viable eggs. (Raun). D. virgifera adults ranged 0-2.7 (averaged 0.8) per plant in 10 corn fields in Rock County. Adults 0-2.1 (averaged 0.1) per plant in 9 fields in Brown County. (Bush). MISSOURI - NORTHERN CORN ROOTWORM (D. longicornis) adults moderate to heavy, averaged 4-6 per corn plant, in northeast area, week ending July 24. (Thomas). Currently, northern corn rootworm adults 0-72 (averaged 2 and 11) per 10 plants and D. virgifera adults 0-129 (averaged 12 and 16) per 10 plants in central area. (MO Corn Pest Mgmt.). IOWA - D. virgifera larvae damaged field corn in Crawford, Carroll, Cherokee, and Woodbury Counties. (IA Ins. Sur.). MINNESOTA - Diabrotica spp. caused 90 percent lodging in Ottertail County corn field. Adults averaged 6-7 per plant in west-central district; 65 percent D. virgifera and remainder D. longicornis. Averages per plant by district: Southeast 1-2, south-central trace to one, southwest 4-6, east-central, and central 1-5. (MN Pest Rpt.). WISCONSIN - Diabrotica spp. adults remained numerous on corn in south and west counties. Fewer heavily infested fields due to dispersal to fields with fresh tassels and silks. Treatments in many south counties: 3,800 acres treated or will be treated in Green County. Heavy, 5+ per plant, in Green, Columbia, Juneau, Iowa, Dane, Walworth, Calumet, Buffalo, Trempealeau, and Eau Claire Counties. (WI Pest Sur.).

OHIO - D. longicornis adults present statewide as emergence increased. Adult averages per 50 plants in continuous corn fields by county: Greene 32.3, Clinton 8.3, Fayette 9.3, Brown 0.3. (Lewis). MARYLAND - D. longicornis larvae heavy in some untreated field corn in Mt. Airy area of Frederick and Montgomery Counties. (U. Md., Ent. Dept.). NEW HAMPSHIRE - About 3 D. longicornis adults per corn plant in margins of fields at Concord, Merrimack County. (Burger).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Light on grain sorghum in Taylor, Irion, Schleicher, and Coke Counties, heavier in McCulloch, Mitchell, and Coleman Counties. Counts of 6 per head in some fields in Coleman County. Heavy in late-blooming fields in Collin and Kaufman Counties. Increasing in Rolling Plains. One field in Jones and Fisher Counties averaged one per head. (Turney et al.).

SMALL GRAINS

INSECTS

WHEAT STEM SAWFLY (Cephus cinctus) - NEW YORK - Infested average of 4.8 percent of stems in wheat fields in Cayuga, Seneca, and Schuyler Counties. Maximum infestation level of 10 percent found in quadrant sampling of 160 stems per field. (Willson).

CEREAL STEM MOTH (Ochsenheimeria vacculella) - NEW YORK - Adults collected July 28 from shutters of house in Tompkins County by R. Helgesen. Determined by J. Franclemont. Additional evidence of activity in Tompkins County but no infestations on wheat to date. (Willson).

MEADOW SPITTLEBUG (Philaenus spumarius) - TENNESSEE - Collected on ragweed in oats in Trousdale and Smith Counties on June 10, 1976. Collected and determined by L.C. Greene. These are new county records. (Greene).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Still causing problems on bermudagrass lawns in Gillespie, Mason, and McCulloch Counties. Counts 15 per square foot in lawns at Eastland, Eastland County. Heavy in the first 3 counties. Many fields of Coastal bermudagrass, kleingrass, and some rangeland areas treated. (Turney et al.). MISSISSIPPI - Heavily infested pasture grass, lawns, and sorghum in Pike, Marion, Yalobusha, Clay, and Hinds Counties. Particularly heavy in south area. Ranged 27-117 per square foot in 50 acres of millet in Yalobusha County. (Cochran).

A SCARAB (Ataenius spretulus) - DELAWARE - Larvae, pupae, and adults in injured portions of fairway turf on New Castle County golf course week ending July 23. (Boys). NEW HAMPSHIRE - Damaged turf on golf courses at Nashua, Hillsborough County, Derry, Rockingham County, and Hanover, Grafton County. (Burger).

A WEEVIL (Hyperodes maculicollis) - NEW HAMPSHIRE - Severe injury on golf courses and race track at Nashua and Berry, Hillsborough and Rockingham Counties. Damaged 20-30 percent of turf. (Burger).

CHINCH BUG (Blissus leucopterus leucopterus) - MARYLAND - Second and third generations active in home lawns in Prince Georges, Montgomery, and Ann Arundel Counties; heavy mortality in many areas due to fungal disease. (U. Md., Ent. Dept.).

FORAGE LEGUMES

DISEASES

SUMMER BLACK STEM (Cercospora zebrina) - KANSAS - Percent of alfalfa plants infected in fields surveyed by county: Smith 10, Decatur 10, Rawlins 60, Greeley trace, Wichita trace, and Rush trace. (Sim).

INSECTS

PEA LEAF WEEVIL (Sitona lineatus) - IDAHO - Severely defoliated alfalfa on edge of green pea fields week of July 23 at Coyote Grade area, Nez Perce County. Defoliation only 40-75 feet into pea field. Ranged 1-3 per sweep and 10-20 at base of alfalfa crowns. (Fisher).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - UTAH - Damaged alfalfa fields at Mendon, Cache County. Controls being applied. (Davis, Knowlton).

PEA APHID (Acyrtosiphon pisum) - IDAHO - Severe, 1,500 per sweep in Marsing, Owyhee County, forage seed field week of July 23. Heavier than normal in most seed fields and many hay fields. (Bitner et al.).

SOYBEANS

DISEASES

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Newly infested soybean fields week ending July 23 by county: Coffee one, Franklin one. (Harrison et al.). ILLINOIS - Soil and plant samples collected in Vermilion County soybean field by R. Long, July 14, 1976. Farthest north in State. Determined by D. Edwards and confirmed by M. Golden. Aerial survey being conducted. Another infested and 5 suspect fields in 2 mile radius noted so far. Four samples collected in Crawford County soybean fields by B. Lahr July 21, and determined by D. Edwards. These are new county records. To date 21 counties now infested, spread reported rapid within older infested areas. (IL Pest Sur.).

SOYBEAN BACTERIAL BLIGHT (Pseudomonas glycinea) - KANSAS - Caused some leaf shredding of about 60 percent of soybean plants in Brown County field. Trace in Riley County field. (Sim).

SOYBEAN BROWN SPOT (Septoria glycines) - KANSAS - Caused some defoliation of about 70 percent of plants in Brown County soybean field. Trace to 40 percent in fields surveyed in Riley County. (Sim).

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MISSISSIPPI - First report of season. Light on soybeans in Washington County. (Worley). ALABAMA - Increased in all soybean fields inspected; counts on 60 feet of row from zero in several counties up to 89 in Monroe County. (McQueen). TENNESSEE - Damage heavy to about 250 acres of soybeans in Franklin, Moore, and Lincoln Counties. (Cagle, Lynch).

SOYBEAN LOOPER (*Pseudoplusia includens*) - ALABAMA - Larvae increased on soybeans statewide; counts on 60 feet of row from 12 in Etowah County up to 78 in Morgan County, 17 in Monroe County. Heaviest defoliation of 3 percent in Morgan County. (McQueen).

PEANUTS

INSECTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - FLORIDA - Continued problems on peanuts at Bascom and Malone, Jackson County; several more fields required treatment week ending July 23. Not enough moisture to carry pesticide into soil to borers. (FL Coop. Sur.).

GRANULATE CUTWORM (*Feltia subterranea*) - ALABAMA - Continued problem on several thousand acres of peanuts in southeast area; reached economic levels in Henry, Covington, and Pike Counties. (Barefield et al.).

COTTON

INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Status on cotton by area: Blacklands between first and second generation; lower Rio Grande Valley 100 punctured squares per 100 plants in few mature fields, 15-45 percent punctured squares in other mature fields due to few squares remaining on plants. Coleman and Runnels Counties light to moderate counts with 0-50 percent square damage; Howard County light to moderate counts in isolated fields; Jones and Fisher Counties 65 overwintered adults captured in 6 pheromone traps during period, 0-30 percent square damage; Kent 25-40 percent square damage in more heavily infested fields; Foard, Hardeman, Haskell, Motley, Stonewall, Wichita, and Wilbarger up to 25 percent square damage in several fields. First generation continued to hatch in north-central area. Infestations ranged 5-97 percent punctured squares. Percent punctured squares by county: Collin, Hunt, and Delta 60 in several fields; Ellis, Navarro, and Kaufman less than 50; Williamson and Milam 25-50 on older cotton, 5-15 on young cotton. (Cole et al.).

MISSISSIPPI - Boll weevil light on cotton in hill section week ending July 23 with some local "hotspots" up to 25 percent. Percent punctured squares (on number of acres) by county: Monroe 0-20 (3,000), Noxubee 1-12 (2,000). Current percent of punctured squares (on acres) averaged by county: Monroe 6 (100), Franklin 2 (285), Montgomery 4 (17), Yalobusha 4 (3,600), Holmes 5 (100), Lowndes 2 (10), Carroll 2 (2,600), Adams 6 (100), Alcorn 6 (50), Noxubee ranged 1-10 (4,000). (Anderson). ALABAMA - Second emergence of adults throughout south and central areas with economic levels reached in most cotton fields. Controls general and good. (Smith et al.). TENNESSEE - Punctured cotton squares 0-9 (averaged 5) percent in Franklin and Lincoln Counties week ending July 23. (Cagle). Currently, punctured cotton squares remained below control levels where surveyed in Franklin and Lincoln Counties. (Cagle, Lynch). Very light in west counties. (Locke). NORTH CAROLINA - Percent punctured squares increased slightly. Threshold levels 10 percent or greater in few fields at Northampton, Edgecombe County. Heaviest defoliation at 14 percent. (Harrell, Robertson).

BOLLWORMS (*Heliothis* spp.) - TEXAS - BOLLWORM (*H. zea*) activity still light with 0-4 percent square damage in Jones and Fisher Counties. Adults in several cotton and sorghum fields. Adults in Williamson and Milam Counties laying eggs in young and old cotton. Counts per 100 cotton plants by area: Weslaco, Donna, Progresso, and Mercedes increased to 50 eggs and 40 larvae; Pharr, San Juan, and Alamo 5-25 larvae and eggs; El Paso Valley eggs averaged 5-6 percent, eggs on all parts of plants, adults in several fields; Acala, Fort Hancock, Island, and Clint 10-15 percent egg populations in some fields; Ellis and Navarro Counties larvae increased; Collin, Kaufman, and Montague Counties larvae light, adults heavy in many fields in Collin and Kaufman Counties; south-central larval populations averaged 3-4 percent with some 5-6 percent populations in scattered fields. (Boring et al.). MISSISSIPPI - *Heliothis* spp. beginning increase on cotton over State. Average percent of larval infestations (in number of acres) by county Monroe 4 (30), Lowndes 3 (10), Prentiss 5 (50), Adams ranged 0.7-5 (100), Montgomery 0-3 (17), Noxubee 3 (4,000). (Anderson). ALABAMA - *H. zea* flight, started July 22 in south area, increased. Eggs 2-60 (averaged 8-15) per 100 terminals. Adults averaged one per 20 square feet July 28 in corn field in Lee County. (Smith et al.).

COTTON FLEAHOPPER (*Pseudatomoscelis seriatus*) - TEXAS - Counts per 100 cotton terminals by county: Childress, Fisher, Hardeman, Haskell, and Jones light to moderate, up to 8; Blacklands area heavy in some late-planted cotton; High Plains area very few; Glasscock, Reagan, Howard, Martin, Pecos, Reeves, El Paso, and Hudspeth light. (Neeb et al.).

BANDEDWING WHITEFLY (*Trialeurodes abutilonea*) - ALABAMA - Heavy in several hundred acres of cotton at Nanafalia, Marengo County. Controls applied. First economic infestation in State for 1976. (Yates et al.).

TOBACCO

DISEASES

BLACK SHANK (*Phytophthora parasitica* var. *nicotianae*) - TENNESSEE - This disease and TOBACCO MOSAIC VIRUS damaged Burley tobacco in Robertson County week ending July 23. (Sauve, Kelly).

INSECTS

HORNWORM (*Manduca* sp.) - TENNESSEE - Up to 818 per acre based on one percent plant sample in 21 tobacco fields. Many fields had enough large larvae to warrant controls. (Gregory).

MISCELLANEOUS FIELD CROPS

INSECTS

SUNFLOWER MOTH (*Homoeosoma electellum*) - TEXAS - Adults decreased greatly in High Plains. Few in sunflower fields checked. (Morrison). NORTH DAKOTA - Second and third instar larvae infested sunflowers. Larva per head by county: Eddy 10, Sargent 4, Dickey 4, Foster one. Percent of infested heads by county: Sargent and Dickey 5, Eddy 33, and Foster 4. (Oseto, Scholl).

CARROT BEETLE (*Bothynus gibbosus*) - TEXAS - Decreased on sun-flowers again in High Plains. Between first and second generation. (Morrison).

POTATOES, TOMATOES, PEPPERS

DISEASES

PHYTOPHTHORA LATE BLIGHT (*Phytophthora infestans*) - NEW YORK - One of worst outbreaks in recent years on several hundred acres of potatoes in muck area of Savannah, Wayne County, week ending July 26. Worst in 30 to 40-acre field where all plants with severe foliar blight and most with extensive stem lesions. Removal of plants recommended in this field. Controls for area to be applied on maximum of 5-day intervals. (NY Wkly. Rpt.).

INSECTS

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - NEBRASKA - Severely defoliated commercial potato fields in Lincoln County. (Campbell). RHODE ISLAND - Second generation adults laid eggs and fed persistently in commercial potato fields and gardens in Providence and Washington Counties. (King, Partyka).

CUCURBITS

INSECTS

SQUASH BUG (*Anasa tristis*) - TEXAS - Damaged squash in gardens in Wilbarger and Young Counties. Counts increased across area. Considerable problem in gardens in panhandle. (Patrick et al.).

NATIONAL WEATHER SERVICE 30-DAY OUTLOOK

AUGUST 1976

The National Weather Service's 30-day outlook for August is for temperatures to average below seasonal normals over the north-eastern quarter of the Nation and also from the southern Plateau through the southern Great Plains to the west gulf coast region. Above normal temperatures are indicated for the Northwest, the south Pacific coast and the Southeast. In unspecified areas, near normal temperatures are in prospect. Rainfall is expected to exceed the median amount over the northeastern quarter of the country as well as the Southwest and the middle Mississippi Valley. Elsewhere less than the median value is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

DECIDUOUS FRUITS AND NUTS

INSECTS

CODLING MOTH (Laspeyresia pomonella) - OHIO - Second-generation adults still increased in Wayne County; averaged 8.5 per black-light trap per night as of July 28, and averaged 13 per pheromone trap per night July 19-26. (Hall). WISCONSIN - Dissections of fruit at untreated site in Dodge County showed this species dominant pest at site. Infested apples outnumbered those with Rhagoletis pomonella (apple maggot) injury about 5:1. Overall, apples about 60 percent infested with codling moth larvae of all sizes. (WI Pest Sur.). NEW YORK - Emergence steady. More stings on fruit this year than normal as of July 19 in Lake Ontario fruit region. (Norton).

OBLIQUEBANDED LEAFROLLER (Choristoneura rosaceana) - NEW YORK - Larvae in new terminal growth of Rhode Island Greenings and Twenty Ounce apple varieties in Wayne County week ending July 26. Third instar larvae folded terminal leaves and injured fruit. (Tette).

EUROPEAN RED MITE (Panonychus ulmi) - NEW HAMPSHIRE - Appeared in apple orchard in Rockingham County. (Bowman, Fisher). MAINE - This species and TWOSPOTTED SPIDER MITE (Tetranychus urticae) building rapidly in some apple orchards. (Gall).

PECAN NUT CASEBEARER (Acrobasis nuxvorella) - TEXAS - Damage on pecans by county: Terrell moderate to heavy on isolated and unsprayed trees at Sanderson; Winkler light damage on isolated trees. Second generation caused problems in Sterling, Taylor, and Concho Counties and damage in Knox County. (Boring et al.).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Counts on pecans by county: Wichita, Wilbarger, and Young increased; Callahan, Concho, Sterling, Mitchell, Schleicher, Mason, and McCulloch light to heavy. (Neeb et al.).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Heavier than usual in some areas. Commercial walnut orchards treated. (CA Coop. Rpt.).

SMALL FRUITS

DISEASES

GRAPE BLACK ROT (Guignardia bidwelli) - WISCONSIN - Leaf spot of this most serious disease on grapes in Dane County vineyard. (WI Pest Sur.).

GRAPE DOWNY MILDEW (Plasmopara viticola) - WISCONSIN - Observed on grapes in Dane County. (WI Pest Sur.).

INSECTS

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - NEVADA - Infested grapes at Mesquite, Clark County, for first time of season. (Hicks).

RASPBERRY CANE BORER (Oberea bimaculata) - NEW HAMPSHIRE - Damaged commercial blackberry stands in Rockingham and Strafford Counties. (Fisher).

EUROPEAN FRUIT LECANIUM (Lecanium corni) - ALABAMA - Collected on ornamental Vaccinium sp. (blueberry) at Chattahoochee State Park, Houston County, by B.J. Muse, May 9, 1976. Determined by M.L. Williams. This is a new county record. (McQueen).

ORNAMENTALS

INSECTS

HOLLYHOCK WEEVIL (Apion longirostre) - NEVADA - Collected from hollyhock at Tonopah, Nye County, by R.C. Bechtel and J.B. Knight July 19, 1976. Determined by R.C. Bechtel. This is a new county record. (Bechtel).

AN ERIOCOCCID SCALE (Hypericicoccus hyperici) - ALABAMA - Collected from Hypericum fasciculatum (sandbush St. Johnswort) about 150 feet north of highway 165 and U.S. highway 431 Intersect, Barbour County, by B.J. Muse, June 11, 1976. Determined by M.L. Williams. This is a new State record. (McQueen).

A MEALYBUG (Rhizoecus floridanus) - ALABAMA - Specimens collected from Berlese sample at Auburn, Lee County, by C.H. Ray, April 7, 1976. This is a new State record. Determined by M.L. Williams. (McQueen).

A MEALYBUG (Pseudococcus sorghiellus) - ALABAMA - Collected on Solidato sp. (goldenrod) at Eclectic, Elmore County, by C.H. Ray and J.M. Dunn, July 4, 1976. Determined by M.L. Williams. This is a new county record. (McQueen).

HEMISPHERICAL SCALE (Saissetia coffeae) - ALABAMA - Collected on fern at Athens, Limestone County, by G.C. Cain, June 10, 1976. Determined by M.L. Williams. This is a new county record. (McQueen).

TULIPTREE SCALE (Toumeyella liriodendri) - ALABAMA - Collected on Michelia fuscata (bananashrub) at Phenix City, Russell County, by R. High, June 15, 1976. Determined by M.L. Williams. This is a new county record. (McQueen).

A SOFT SCALE (Pulvinaria urbicola) - ALABAMA - Collected on Baccharis sp., at Mobile, Mobile County, by B.J. Muse, May 23, 1976. Determined by M.L. Williams. This is a new county record. (McQueen).

A TENUIPALPID MITE (Tenuipalpus pacificus) - FLORIDA - Adults collected from Davallia fejeensis (rabbitsfoot fern) in florist shop at Largo, Pinellas County, July 21. This is a new host record for State. (FL Coop. Sur.).

FOREST AND SHADE TREES

DISEASES

PINE TIP BLIGHT (Diplodia pinea) - WEST VIRGINIA - Caused stunting, browning, and dieback of new growth on Pinus sylvestris (Scotch pine) on Christmas tree plantations in Raleigh County July 20. Moderate to heavy on 5 acres. (Arnold, Gibson).

DUTCH ELM DISEASE (Ceratocystis ulmi) - MINNESOTA - Confirmed on elm trees for 2 new municipalities, Freeport, Stearns County, and Hinckley, Pine County. Data from 124 of 164 metropolitan municipalities show record loss of elms. Total of 25,549 elms lost as of June 30 compared to total of 27,044 for 1975 season. (MN Pest Rpt.). See SMALLER EUROPEAN ELM BARK BEETLE under this section.

INSECTS

PINE NEEDLE SCALE (Chionaspis pinifoliae) - TENNESSEE - Collected on Scotch pine at Dickson, Dickson County, by D. Hooper, June 17, 1976. Determined by C. Gordon. This is a new county record. (Hooper, Gordon).

FALL WEBWORM (Hyphantria cunea) - ALABAMA - Broods 3-10 in most host trees in Wind Creek State Park area, Tallapoosa County. Similar infestations in persimmon and in pecan trees at Lillian and Elberta, Baldwin County. (Baker et al.). NEW HAMPSHIRE - Continued to increase throughout south third of State. Webs appeared on many shade trees along most major highways. Most noticeable in Rockingham County north and west to Concord, Merrimack County. Large webs in many areas. (Burger).

TENT CATERPILLARS (Malacosoma spp.) - OREGON - Very heavy flights in north Willamette Valley end of July. Light traps caught 837 adults at Dever and 7,500+ at St. Paul July 22-28. Heavy concentrations accumulated around street lights and lighted buildings in Washington and Multnomah Counties. (Penrose, et al.).

LOCUST LEAFMINER (Odontota dorsalis) - OHIO - Severe browning of black locust foliage in southeast and south-central areas. Extensive damage in southeast area with damaged black locust trees obvious on hillsides. Damage in south-central area less widespread except at Chillicothe, Ross County. Adults averaged 5 (maximum 12) per leaf. (Lewis, Barth). WEST VIRGINIA - Larval damage, 50 percent to black locust tree foliage in Cabell County July 20. (Hacker).

ELM LEAF BEETLE (Pyrrhalta luteola) - UTAH - Severely damaged American elms at Tooele, Tooele County, and San Juan County. (Roberts et al.). TEXAS - Heavy infestations damaged foliage of Siberian elms in Motley and Wilbarger Counties. (Turney, Boring).

BRONZE BIRCH BORER (Agrilus anxius) - OREGON - Adult emergence holes detected in trunks of Betula occidentalis along Pine Creek, 5 miles east and 3 miles south of Post, Crook County, July 26, 1976. Observed and determined by R.L. Westcott. This is a new county record. (Westcott).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - MINNESOTA - Second-generation adults emerged from Dakota County July 27. (MN Pest Rpt.). See DUTCH ELM DISEASE under this section.

A SPIDER MITE (Eotetranychus weldoni) - NEVADA - Severely damaged black willow at Kershaw and Ryan State Park, Lincoln County. (Zoller et al.).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - TEXAS - Counts by county: Terrell light on cattle; Presidio, Glasscock, Winkler, and Pecos light to moderate on cattle; Crockett moderate to heavy on cattle; Presidio moderate on sheep and goats; Glasscock and Terrell light to moderate on sheep and goats; Archer, Cottle, Dickens, and Young moderate to heavy. Heavy on all untreated herds; treated herds reinfested in about 2-4 days in north-central area. (Wilson et al.). NEBRASKA - Averaged 500+ per head on untreated cattle in southwest district. (Campbell). ILLINOIS - Averaged 333.4 per animal on cattle in Ogle County. (IL Pest Sur.). KENTUCKY - Counts on cattle in Lincoln County: 130 on 10 untreated polled Hereford cows, 69 on 10 treated polled Hereford yearling heifers, 4 on 10 treated yearling bulls. (Christensen).

FACE FLY (Musca autumnalis) - NEBRASKA - Averaged 15 per face on untreated cattle in canyon and river valley pastures in south west district. (Campbell). ILLINOIS - Averaged 41.6 per head on cattle in Ogle County. (IL Pest Sur.). MISSISSIPPI - Adults averaged 2 per face on cattle near Union, Newton County, July 20 1976. Collected and determined by R.L. Combs. This is a new county record. Current adult averages per face by county: Oktibbeha 20+, Yalobusha 5+, Montgomery 10+, Prentiss 18. (Anderson). KENTUCKY - Means on cattle by county: Lincoln 21 on 10 untreated polled Hereford cows, 26 on calves, 13 on 10 treated polled Hereford yearling heifers, 6 on 10 treated yearling bulls; Casey 28 on 10 Angus cows, 18 on 10 calves. (Christensen).

STABLE FLY (Stomoxys calcitrans) - NEBRASKA - Averaged 25 per leg on untreated cattle in southwest district. (Campbell). ILLINOIS - Averaged 86.6 per head on cattle in Ogle County. (IL Pest Sur.). MISSISSIPPI - Adults 40-75 per head on legs of 125 crossbreed cattle in Jones County. Irritation resulting in loss of weight. Controls ineffective. (Jarratt).

SHEEP BOT FLY (Oestrus ovis) - UTAH - Serious problem to sheep herds on Indian lands in San Juan County. (Cox).

MOSQUITOES - NEW HAMPSHIRE - Aedes sollicitans adults of second major generation emerged July 19-23 at Seabrook, Rockingham County. Adults very abundant throughout seacoast region of Rockingham County. (Burger).

HORSE FLIES (Tabanus spp.) - NEW HAMPSHIRE - Three species still abundant and annoying livestock in south area; Tabanus nigrovittatus common along coast; T. superjumentarius and T. quinquevittatus most common inland. (Burger).

DEER FLIES (Chrysops spp.) - NEW HAMPSHIRE - Still abundant in forested areas. Chrysops macquarti and C. vittatus most abundant in south half. C. moechus common in selected localities in Merrimack County. (Burger).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - MISSOURI - Collected from building at Rock Port, Atchison County, by D. Mobley, July 21, 1976. Determined by W.S. Craig. This is a new county record. (Munson).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

AN ICHNEUMONID WASP (Bathyplectes curculionis) - NEW MEXICO - Pupae taken from alfalfa at Dexter, Chaves County, April 22, 1976. Collected and determined by J. Durkin. This is a new county record. Infestation from area where Hypera postica (alfalfa weevil) established for one year. (NM Coop. Rpt.).

A FLESH FLY (Blaesoxipha kellyi) - NEW MEXICO - Reared from Hemileuca oliviae (range caterpillar) pupae collected northeast of Abbott, Colfax County, by D. Liestner, August 26, 1970. Determined by R.J. Gagne. This new host record for State extends feasibility of biological control of range caterpillar. (NM Coop. Rpt.).

A CERAMBYCID BEETLE (Crossidius pulchellus) - NEW MEXICO - Adults emerged in central Lincoln County. Known effective control of Gutierrezia sarothrae (broom snakeweed). (NM Coop. Rpt.).

FEDERAL AND STATE PROGRAMS

INSECTS

CEREAL LEAF BEETLE (Oulema melanopus) - TENNESSEE - Larvae collected on oats at Crossville, Cumberland County, by C.E. Turpen, May 20, 1976. VIRGINIA - Collections by S.L. Sears, June 4, 1976 by county: Nottoway larvae on oats, Amelia adults on barley, Chesterfield adults on wheat. Collections by J. May by county: Middlesex adults on oats at Hartfield June 2, King and Queen adults and larvae on oats June 7, Mathews adults on weeds and grass next to wheatfield at Soles June 9. Adults collected on oats at Highland Springs, Henrico County, by D. Innes, June 8. Adult collected on wheat in Prince George County by D. Innes and S.L. Sears, June 10. Adult collected at Dunbrooke, Essex County, by J. May and D.P. Innes, June 23. MASSACHUSETTS - Larvae and adults collected on oats and rye at Agawam, Hampden County, by P. Laurenza, June 14, 1976. Larvae collected on oats at New Braintree, Worcester County, by W.B. Rose, June 15. All determinations by R.E. White. New county records for all 3 States. (PPQ). WISCONSIN - Two larvae collected in Walworth County in intensive survey conducted in extreme southeastern counties in mid-June, 4-fold decrease of number found in 1975. (WI Pest Sur.).

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Second-generation male flight on decrease. Males per trap averaged 12.2

compared with 96.6 last period. Traps placed throughout Tulare and Kern Counties to monitor and/or detect third generation activity. (CA Coop. Rpt.).

GRASSHOPPERS - NORTH DAKOTA - Controls applied on 31,104 acres treated on Fort Berthold Indian Reservation. Kill averaged 90+ percent where grasshoppers had averaged 30+ per square yard. (Winks). Melanoplus bivittatus and M. sanguinipes up to 20 (averaged 8) per square yard in sugar beet field in Richland County. Up to 30 per square yard in marginal areas. Development from fourth instar up to adult with 90 percent as adults. (Scholl). KANSAS - Grasshoppers averaged about 7 per square yard along sorghum field margin in Republic County, about 75 percent M. differentialis. Grasshoppers 1-3 per square yard along corn and sorghum field margins in Marshall, Brown, and Doniphan Counties. (Bell).

GYPSY MOTH (Lymantria dispar) - CALIFORNIA - Three males in pheromone traps at San Jose, Santa Clara County. Collected July 21, 1976, by K. Terineshi. Determined by R. Somerby. One specimen about 0.75 mile from trap that caught single male in fall of 1975. Traps set in this area all season. Traps have been placed 9 per square mile over 9-square-mile area. Visual inspection began, to detect any evidence of larvae. (CA Coop. Rpt.). PENNSYLVANIA - Pupation peaked in Black Moshannon State Park; emergence began. Infestation light. Male flight ending in Sugar Valley, Walker Township, Clinton County. Two males taken at Scotia Barrens, Centre County, and 4 at Reedsville, Mifflin County. (Mastro et al.). VIRGINIA - Adult male trapped in Accomac County July 20. (Hamilton). NEW YORK - Male flight very noticeable July 21. Egg laying underway. Larvae and pupae at Pittsford, Monroe County, 1-2 miles southwest of known infestation. (Personius).

JAPANESE BEETLE (Popillia japonica) - TENNESSEE - Many adults damaged apple, and sassafras trees and garden crops in localized areas of many east counties. Damage very heavy in some areas, such as Cades Cove of Great Smoky Mountains National Park. (Turpen, Van Landingham). MARYLAND - Egg laying peaked in central counties and hatched in Montgomery and Howard Counties. (U. Md., Ent. Dept.). PENNSYLVANIA - Feeding damage on corn silks and leaves still noticed in Juniata and Perry Counties. (Kim). NEW YORK - Heavy feeding on new corn silks in Chenango County week ending July 26. (Muka).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Infested 4 percent of cotton bolls in field at Rangerville, Cameron County. Infestation very light, but much larger in area and total number than recorded in lower Rio Grande Valley in several years. (Deer, Norman).

RANGE CATERPILLAR (Hemileuca oliviae) - TEXAS - Still minor problem south of Texline in Dallam County. (Patrick).

WHITEFRINGED BEETLES (Graphognathus spp.) - ALABAMA - Adults on 60 foot of row of soybeans by county: Shelby 10, Mobile 2, Geneva 20. (Lockhart et al.).

HAWAII PEST REPORT

General Vegetables - LEAFMINER FLIES (Liriomyza spp.) generally, moderate (30-50 percent of leaves heavily mined) and light damage on 4 acres of tomatoes, 0.25 acre of eggplants, and 2 acres of watermelons at Omaopio, Maui. Counts (75-85 percent of leaves heavily mined) and damage heavy on one acre each of tomatoes and watermelons. GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) heavy (80 percent of leaves with nymphal colonies) and moderate foliar damage on 0.25 acre of eggplants at Omaopio. Moderate adult colonies (50-75 percent of plants; 2-3 leaves per plant) and damage on 0.25 acre each of young head lettuce and Romaine lettuce at Omaopio. CABBAGE LOOPER (Trichoplusia ni) infestations and damage moderate (40 percent of heads, 4-12 larvae per head) on 4 acres of head cabbage at Kula and trace on 1.5 acres of cauliflower at Waiakoa, Maui. (Miyahira, L. Nakahara).

Fruits and Nuts - BANANA SKIPPER (Erionota thrax) recently reported from west Hawaii Island. Very light but well distributed in roadside plantings of bananas at Holualoa, Kainaliu, and Kealahakua. Pest present on east Hawaii Island since February 1975. Apanteles erionotae (a braconid wasp) parasitized 50 percent of banana skipper larvae. (Lai et al.). MEDITERRANEAN FRUIT FLY (Ceratitis capitata) adults and egg laying marks light on green persimmon fruits (40 trees) at Kula, Maui. (Miyahira, L. Nakahara).

Ornamentals - CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavy on 1.5 acres of carnations at Kula. Damage to blossoms light. (Miyahira, L. Nakahara). ORANGE SPINY WHITEFLY (Aleurocanthus spiniferus) light in yard planting of rose at Waipahu, farthest west locality on Oahu of record. (L. Nakahara).

Forest and Shade Trees - Light counts and trace damage by an ADELGID (Pineus pini) on roadside Pinus pinaster (cluster pine) in Monterey pine and cluster pine stand at Polipoli in Kula Forest Reserve, Maui. Heavy on several cluster pines, early signs of dieback. Leucopis obscura (a chamaemyiid fly) recently released on Maui to help control. (Miyahira, L. Nakahara).

Man and Animals - Adult activity of a VESPID WASP (Vespula vulgaris) light, 6-8 workers on Fuchsia sp. blossoms at Olinda Forest Reserve, Maui. First activity of year noticed several weeks ago by resident. Baiting stations established. (Miyahira, L. Nakahara).

Turf and Pasture - GRASS WEBWORM (Herpetogramma licarsisalis) moderate, up to 6 larvae and 4 adults per square foot, in various pasture grasses between Hana and Nahiku, Maui. Destroyed 0.5 percent of blades. (Shon).

CORRECTIONS

CPPR 1(30):451 - Change "Only nonsterile MEDITERRANEAN FRUIT FLIES ..." to read "Only sterile MEDITERRANEAN FRUIT FLIES ..."

DETECTION

NEW STATE RECORDS

INSECTS

A NOCTUID MOTH (Spaelotis clandestina) - WEST VIRGINIA - Larvae taken at Old Fields, Hardy County, in bark crevice of black oak, May 26, 1976. Collected and determined by Dr. C.C. Coffman. (Hacker). A general feeder, some hosts are fruits, vegetables, legumes, and small grains. (PPQ).

AN ERIOCOCCID SCALE (Hypericicoccus hyperici) - ALABAMA - Barbour County. (p. 487).

A MEALYBUG (Rhizoecus floridanus) - ALABAMA - Lee County. (p. 487).

NEW COUNTY RECORDS

DISEASES

SOYBEAN CYST NEMATODE (Heterodera glycines) - ILLINOIS - Vermilion, Crawford (p. 482).

INSECTS

BRONZE BIRCH BORER (Agrilus anxius) - OREGON - Crook (p. 488).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - MISSOURI - Atchison (p. 490).

CEREAL LEAF BEETLE (Oulema melanopus) - TENNESSEE - Cumberland; VIRGINIA - Nottoway, Amelia, Chesterfield, Middlesex, King and Queen, Mathews, Henrico, Prince George, Essex; MASSACHUSETTS - Hampden, Worcester (p. 490).

EUROPEAN FRUIT LECANIUM (Lecanium corni) - ALABAMA - Houston (p. 487).

FACE FLY (Musca autumnalis) - MISSISSIPPI - Newton (p. 489).

HEMISPHERICAL SCALE (Saissetia coffeae) - ALABAMA - Limestone (p. 487).

HOLLYHOCK WEEVIL (Apion longirostre) - NEVADA - Nye (p. 487).

AN ICHNEUMONID WASP (Bathyplectes curculionis) - NEW MEXICO - Chaves (p. 490).

MEADOW SPITTLEBUG (Philaenus spumarius) - TENNESSEE - Trousdale, Smith (p. 481).

A MEALYBUG (Pseudococcus sorghiellus) - ALABAMA - Elmore (p. 487).

PINE NEEDLE SCALE (Chionaspis pinifoliae) - TENNESSEE - Dickson (p. 488).

A SOFT SCALE (Pulvinaria urbicola) - ALABAMA - Mobile (p. 487).

TULIPTREE SCALE (Toumeyella liriodendri) - ALABAMA - Russell (p. 487).

LIGHT TRAP COLLECTIONS

	Temperature	Precipitation	Type of trap	Crops														
				Apple	Blackberry	Blacklight	Blacklight	Blacklight	Blacklight	Blacklight	Blacklight	Blacklight	Blacklight	Blacklight	Blacklight	Blacklight	Blacklight	Blacklight
CALIFORNIA	64-90		BL															
Bellevue 7/20	59-90		BL															
Clements 7/19			BL															
FLORIDA			BL															
Alachua 7/17, 19-21, 25			2BL															
Gainesville 7/23-29			BL															
KANSAS			BL															
Garden City 7/26-28			BL															
Tribune 7/22, 26			BL															
MINNESOTA			BL															
Shakopee 7/22-28	63-95	2.01	BL															
Worthington 7/22-28	65-95		BL															
MISSISSIPPI			2BL															
Stoneville 7/23-29	72-97	0.62	BL															
NEBRASKA			BL															
Aurora 7/22-28			BL															
Scottsbluff 7/19-25			BL															
NORTH DAKOTA			BL															
Bismarck 7/16, 22			BL															
Jamestown 7/12, 14, 22			BL															
OHIO			BL															
Wooster 7/24-30			BL															
OREGON			BL															
Dever 7/22-28			BL															
St. Paul 7/22-28			BL															
PENNSYLVANIA			BL															
Central 7/21-28			BL															
North East 7/21-28			BL															

[illegible][illegible]

Exotic Pests in International Commerce

Plant Importation and Technical Support Staff

The following is a list of exotic plant pests which quarantine authorities have recently prevented from entering the United States.

<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Uredo behnickiana</u> a rust	P. Henn	New Orleans	Mexico	FL
<u>Sphenospora kevorkianii</u> a rust	Linder	Hawaii	Brazil	HI
<u>Baris sp.</u> a curculionid beetle		Houston	Mexico	TX
<u>Coptotermes formosanus</u> Formosan subterranean termite	Shiraki	Boston	Republic of China	MA
<u>Pissodes nitidus</u> a curculionid beetle	Roelofs	San Francisco	Japan	CA
<u>Sinoxylon crassum</u> a bostrichid beetle	Lesne	New York	India	NY
<u>Sinoxylon indicum</u> a bostrichid beetle	Lesne	New York	India	NY
<u>Cochlicella conoidea</u> a snail	(Draparnaud)	New York	Spain	NY

WEATHER OF THE WEEK ENDING AUGUST 1

Reprinted from Weekly Weather and Crop Bulletin Supplied by National Weather Service, NOAA.

HIGHLIGHTS: A seasonable cycle of heat, showers, thundershowers, and thunderstorms stretched over a major portion of the Nation during the week. Record-breaking high temperatures baked Alaska while the northeast cooled down to record-breaking low readings. Heavy rains in the wake of thunderstorm activity deluged Colorado and created extensive flooding, loss of life, and land and property damage.

TEMPERATURE AND PRECIPITATION: Very cool temperatures dominated the Northeast early Monday while warm readings existed again in the Plains States. A large sprawling high pressure system with chilly air, clear skies, and light winds combined to produce record low temperatures through much of Pennsylvania and sections of New York and New England. The mercury plunged to lows of 39 degrees in Concord, New Hampshire, 45 degrees in Portland, Maine, and Burlington, Vermont, 47 degrees in Scranton, 48 degrees in Allentown, Pennsylvania, and 49 degrees in Syracuse, New York. Morning temperatures across the Plains States surged above the readings registered in Florida as the mercury ascended rapidly in the Northeast. As the day progressed, "hot" characterized the weather picture over the Great Plains while the Pacific Northwest listed a cool 50 degree range.

Showers and thundershowers preceeded the cold front through Iowa, southern Minnesota, and across Wisconsin into upper Michigan and over the High Plains. Showers and thundershowers developed over the Gulf Coast States and were isolated over the southern Rockies through parts of Arizona and southern California. Tuesday morning found showers and thundershowers over the southern Rockies, the southern Plateau region and the upper Mississippi Valley. Showers and thunderstorms roared across the southern two-thirds of the Mississippi Valley, through the Ohio Valley and New England, and south through central Florida and North Carolina. Mild temperatures lingered over the Desert Southwest and through western Texas. Mercury marks hovered around the 80-degree range over much of the country. Parts of Kansas, Oklahoma, Missouri, the Desert Southwest, and the California Interior measured highs around the 100-degree range.

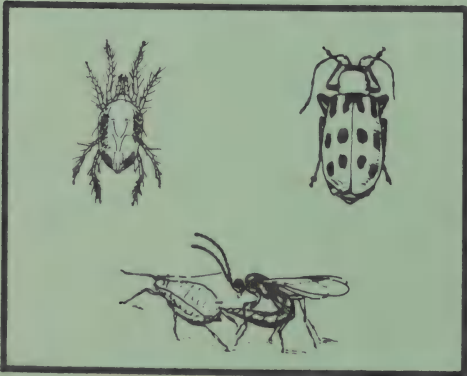
Thundershowers and showers increased following the usual daily cycle in the western Dakotas from Nebraska across Iowa and Illinois and into Kentucky and southern Indiana. Heavy rain poured more than 4 inches of moisture over an area southwest of Peoria, Illinois. The main area of showers and thundershowers rumbled through the Texas Panhandle across the Kansas plains into Wisconsin and northern Illinois early Wednesday. The heaviest precipitation fell in northwestern Iowa with almost 2.25 inches at Waterloo in 6 hours and 3.50 inches at Shell Rock in a 24-hour period.

Maximum temperatures over the Nation remained generally seasonable except in Oklahoma where the mercury soared to near 100 degrees. Oregon readings measured in the 90's. Corn farmers in southern Illinois, southern Indiana, and western Kentucky welcomed the heavy rains on Thursday. Approximately 4.50 inches of rain flooded Detroit, Michigan, streets and freeways. Thunderstorms also dumped over 0.5 inch of rain in parts of southern Arizona and southern New Mexico.

Flood watches mushroomed in portions of southeast Missouri and western and south-central New York after extensive rainfall. Isolated thundershowers lingered from the northern half of the Pacific coast region into Idaho and northern Utah and into the southern sections of Arizona and New Mexico. Severe weather pummeled portions of Arkansas and Tennessee with high winds, hail, and tornadoes. Winds gusted to almost 80 m.p.h. at Baker Airport near Memphis, Tennessee, while golf ball-sized hail pelted an area near Little Rock, Arkansas. Strong winds buffeted Las Vegas, Nevada, at about 75 m.p.h. while St. Cloud, Minnesota, received golf ball-sized hail.

Widely scattered thunderstorms dotted the weather map on Friday. Nebraska's weather included baseball-sized hail in the southern areas and a tornado and 2 inches of rain at Scottsbluff, Nebraska, in Minnesota, baseball-sized hail pounded Willmar and wind gusts of more than 60 m.p.h. swept across Rochester. Late in the afternoon 0.5 inch of rain soaked Richfield, Utah, in 12 minutes. The week ended as rains saturated the northern Colorado Mountains and foothills with 10 to 14 inches of precipitation. Increased moisture forced Big Thompson and Cache La Poudre Rivers out of their banks and caused extensive flooding.

Thunderstorms continued Sunday afternoon over portions of eastern Colorado. Denver received about 3 inches of rain in one hour while around 2.5 inches covered the Colorado Springs area. Later, on Sunday, thunderstorm activity shifted from the southern and central Rockies into the Great Plains and Oklahoma. Some showers and thundershowers continued in the northern Rockies and northern California while thunderstorms besieged the Carolinas along the gulf coast, the lower Mississippi Valley, extreme western Texas, and extreme southern New Mexico. While clear and unseasonable cool weather gripped the northern tier of the States, from Minnesota through New England, the mercury in Fairbanks, Alaska, soared to record high of 88 degrees.



Reserve

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Cooperative PLANT PEST REPORT



Animal
and Plant
Health
Inspection
Service

U.S.
DEPARTMENT
OF AGRICULTURE



This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
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Hyattsville, Maryland 20782

COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM moderate to heavy on grassy corn in Nebraska. Damaged grass in Coastal Plain of North Carolina. (p. 501).

CORN EARWORM caused widespread concern to sweet corn in south New Mexico, infested all corn ears and sorghum whorls in parts of Oklahoma, and 25+ percent of corn ears in parts of east Virginia. (pp. 501-502). Adults 100+ per trap per night in central South Carolina. (p. 519).

CORN LEAF APHID counts heavy on sorghum in parts of Texas and Oklahoma, and becoming heavy in Pennsylvania and Maine. (p. 502).

GREENBUG very severe on some grain sorghum in Texas and Oklahoma, and sorghum and corn in Nebraska. (pp. 502-503).

POTATO LEAFHOPPER three per sweep and higher on alfalfa in parts of Missouri, Wisconsin, Pennsylvania, and New Jersey. (p. 503).

EUROPEAN CORN BORER adults peaked in Iowa, heavy in light traps in Minnesota, Wisconsin, Massachusetts, and New Hampshire. (pp. 503-504).

FALL ARMYWORM heavy on grass in Mississippi (p. 504) and Arkansas (p. 506), sorghum in Oklahoma, and corn in Nebraska (p. 504).

CORN ROOTWORM adults heavy in Texas, Nebraska, Iowa, and Maryland; damage heavy in parts of Oklahoma. (pp. 505-506).

BEAN MOSAIC VIRUS infected early beans throughout Pennsylvania. (p. 509).

GRASSHOPPERS damaged rangeland in Oregon and Texas. (p. 515).

Detection

A EULOPHID WASP is new for Hawaii. (p. 516).

For new county records, see page 517.

In Revised Issue of CPPR 1(1-4), February 6, 1976, pages 22-36 have been completely revised and corrected; other material is unchanged. Please retain original map of Imported Fire Ant Quarantines and discard remainder of original issue. Delete Corrections to loss data in CPPR 1(7):60 and CPPR 1(13):126.

Reports in this issue are for the week ending August 6, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

DISEASES

CURLY TOP VIRUS - CALIFORNIA - Infection 4 percent in beet field. (CA Coop. Rpt.). See BEET LEAFHOPPER under this section.

MAIZE DWARF MOSAIC VIRUS - KANSAS - Severe in corn in Jackson County field. Continued major disease of grain and forage sorghum this year. Infected 2 percent of plants in fields surveyed in Sumner County. Severe enough on forage plants to cause red leaf stage. On no more than one percent of plants in several grain sorghum fields in Rice County. (Sim). PENNSYLVANIA - Symptoms in 90-100 percent of corn in several late-planted fields in Allegheny County. Transmitted by CORN LEAF APHID (Rhopalosiphum maidis). (Tetrault). See this aphid under this section.

INSECTS

ARMYWORM (Pseudaletia unipuncta) - NEBRASKA - Still in corn throughout east and south halves of State. Moderate to heavy infestations common, particularly in fields with grassy weeds. Defoliation severe in some fields. About 25 percent of 150 fields of corn surveyed in Merrick, Hall, and Buffalo Counties treated. Some pupation started, but larvae from 0.25 inch long to full growth still present. Larvae up to 25 per linear foot of row in grassy fields. At least 50,000 acres of corn treated in Merrick County. (Raun, July 30 to Aug. 4). First to fifth-instar larvae on corn in Antelope and Pierce Counties. Some plants completely stripped. (Koinzan, July 30 to Aug. 4). Currently common on corn in west area of northeast district. (Witkowski). Somewhat spotty and restricted to isolated areas within fields in south-central district. (Peters). Most prevalent in hailed areas in southwest district, probably due to relative abundance of grassy weeds in those fields. (Campbell, Boxler). Severely defoliated 80 acres of irrigated pasture in Sheridan County, most larvae 1-1.5 inches. (Hagen). NORTH CAROLINA - Armyworm damage continues in Coastal Plain on grass crops, particularly Coastal bermudagrass. Larvae very light to 30 per square foot in some spots. (Hunt). MARYLAND - Ten late larval instars per row foot on grasses in no-till soybeans in Caroline County. (U. Md., Ent. Dept.). MAINE - Adults in black-light traps July 30, indicate second generation could possibly feed on some corn, grass, or small grains. Damage not expected to be significant at this time. (Gall).

BEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Survey of valley floor shows 2-3 per sweep on weed hosts; about 40 percent nymphs. (CA Coop. Rpt.). See CURLY TOP VIRUS under this section.

CORN EARWORM (Heliothis zea) - NEW MEXICO - Light to moderate counts causing widespread concern on sweet corn in much of south area. (NM Coop. Rpt.). OKLAHOMA - Counts by county: Beaver, Texas, and Cimarron moderate to heavy in emerging tassels or ears in most corn; Caddo infested 100 percent of ears; Caddo all corn ears infested; Washita, Caddo, Canadian 1-2 per sorghum head in some scattered fields; Comanche all sorghum whorls infested; southwest counties 30-90 per 100 sorghum heads; Marshall 0.25-1.0 per row foot of peanuts; Jackson 7 adults in light trap. (OK Coop. Sur.).

ARKANSAS - Corn earworm counts on sorghum by county: Conway, Perry, Pope, Yell, and Miller very light; Dallas heavy. (Boyer). MISSOURI - Light on late sorghum in southwest area, first to third instar larvae infested 2-21 percent of plants. (Munson).

FLORIDA - Corn earworm increased rapidly on peanuts throughout Jackson County; several fields required treatment week ending July 30. (FL Coop. Sur.). NORTH CAROLINA - Adults in southern Coastal Plain soybean fields. Adults in each of 20 fields scattered across Harnett, Sampson, Duplin, and Cumberland Counties. Adults at detectable levels in 50 percent of 7 soybean fields in Edgecombe, Halifax, and Northampton Counties. (Hunt, Wells). VIRGINIA - Percent of larval infestations in corn ears by area: Tidewater region 27.2, south of James River 39.2, middle peninsula 30.8, Northern Neck 11.6. Many ears had dead larvae. May cause moderate damage to soybeans in Northern Neck region and moderate to serious damage south of James River. Most larvae reaching pupation. (Allen). MARYLAND - Light statewide with eggs or larvae in less than 5 percent of corn ears in silk. (U. Md., Ent. Dept.). NEW JERSEY - Increases on sweet corn expected to continue during August. (Ins.-Dis. Newsltr.). NEW HAMPSHIRE - First adult in light trap August 1 in Strafford County. (Bowman).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Continued decrease on grain sorghum in panhandle and High Plains. Moderate in Motley County. Colonies averaged 50-60 aphids, some with 300-400, in El Paso Valley. (Patrick et al.). OKLAHOMA - Heavy, 100-500 per plant, on young sorghum in Washita, Caddo, and panhandle counties. (OK Coop. Sur.). ILLINOIS - Infestations scattered statewide. Infestations 50 percent or more with 50+ per plant in some fields in Kankakee and Livingston Counties. No serious damage expected from silk clipping or foliar feeding. (IL Pest Rpt.). TENNESSEE - Very heavy on sweet corn in Sequatchie County. (Williams). PENNSYLVANIA - Reaching large populations statewide due to cool, wet weather. Counts of plants infested per 20 plants by county: Crawford 5, 10; Elk 8; Fayette 2; Westmoreland 4, 3, 7. (Kim). MAINE - Becoming heavy on emerged corn tassel stems, mostly hiding just above ligule of top leaf. (Gall). See MAIZE DWARF MOSAIC VIRUS under this section.

GREENBUG (Schizaphis graminum) - TEXAS - Counts heavy on grain sorghum; damage economic in Dallam, Hartley, Hutchinson, and Deaf Smith Counties. Counts by county: Hale generally decreasing, up to 2,000 per plant in some fields; High Plains economic mostly in preboot sorghum; Jones, Knox, and Wichita moderate to heavy; Motley very light to moderate; El Paso still very light. (Patrick et al.). OKLAHOMA - Counts on sorghum by county: Beaver, Texas, and Cimarron heavy scattered infestations, some fields treated twice, predators numerous and parasites rapidly increasing in untreated fields; Caddo and Washita heavy on young sorghum; Payne averaged 50 per plant; Jefferson on sorghum and Sudan hybrids and Comanche on sorghum--10-100 per plant; southwest area light to moderate due to heavy parasitism. (OK Coop. Sur.). COLORADO - Up to 100 per plant on 25-80 percent of sorghum infested in fields checked in Arkansas Valley. (Schweissing). NEBRASKA - Increased slightly on untreated, susceptible sorghum in Clay County, averaged 1,046 per plant August 2. Up to 300+ per plant on 8 to 12-inch corn planted in wheat stubble July 30; little visible damage by August 3. (Peters). MISSOURI - Light to moderate on late sorghum in southwest and north-central areas. Small colonies numbered 4-8

on 6 to 11-inch sorghum on 46 percent of plants and ranged 6-10 on 15 to 20-inch sorghum on 30-34 percent of plants. Two discolored leaves on smaller sorghum and 2-6 on taller sorghum. (Munson).

POTATO LEAFHOPPER (Empoasca fabae) - MISSOURI - Counts per 10 sweeps of forage legumes by area: South-central, southwest, and west-central 80-300, moderate to heavy; southwest averaged 100; and south-central averaged 250. (Munson). WISCONSIN - Counts by county: Alfalfa--southeast and south-central 5 per 10 sweeps to 30 per sweep; southwest, west-central, and central lighter; northwest 2-5 per sweep; beans--Central Sands 0-4 per sweep; potatoes--Spring Green and Central Sands 0-4 per sweep. (WI Pest Sur.). INDIANA - Adults and nymphs increased on alfalfa statewide week ending July 30. (Sutton, Morihara). OHIO - Moderate, generally below economic threshold on third-growth alfalfa in northwest area. Adults per 100 sweeps by county: Fulton 58, Williams 50, Henry 56, and Wood 76. (Lewis). PENNSYLVANIA - Damage more apparent as third-growth alfalfa matures. Averages per sweep (and yellowing) by county: Centre 2.5 (trace); Erie 1.2; Indiana 1.0, 0.8 (up to 10 percent); Potter 4, 4, 4.5, 5 (general); Venango 3.1 (some); Westmoreland 0.9, 1.2 (up to 10 percent). (Shetlar et al.). NEW JERSEY - Nymphs and adults averaged 78 per 25 sweeps of alfalfa at 5 sites. (Ins.-Dis. Newsltr.). RHODE ISLAND - Many problems on beans and solanaceous crops in gardens in Kent County. (Larmie).

SPOTTED ALFALFA APHID (Therioaphis maculata) - COLORADO - Up to 1,000 per 100 sweeps of alfalfa in Arkansas Valley. (Schweissing). WISCONSIN - Heavier than usual, 3-20 per sweep, alfalfa in southeast counties. Lighter in other areas. (WI Pest Sur.).

TOMATO HORNWORM (Manduca quinquemaculata) - NEW MEXICO - Moderate damage to tomatoes in Dona Ana County. (NM Coop. Rpt.).

CORN, SORGHUM, SUGARCANE

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MISSOURI - Egg masses 0-32 (averaged 5.2 and 2.9) per 100 plants in central area. (MO Corn Pest Mgmt.). IOWA - Continued second-generation collection at light traps. Peaked in Story County August 4. (IA Ins. Sur.). MINNESOTA - Emergence of second generation almost completed in south-central district and progressing towards completion in southeast, southwest, and west-central districts. Adults heavy in traps. All signs indicate large second generation. Number of plants infested (and average larval number) per 100 plants by district: Southeast 17 (9), south-central 8 (4), southwest 5 (7), west-central 4.5 (1.1), northwest 6 (18). (MN Pest Rpt.).

WISCONSIN - European corn borer egg masses 1-2 per 25 corn plants in Lafayette County. Spring brood infestation generally light in southeast area. Mostly pupae in Pepin, Pierce, St. Croix, Buffalo, Dunn, and Eau Claire Counties. Still heavy in blacklight traps. Adults swept from potato fields in Spring Green and Central Sands areas. High pupal percentage indicates extended flight period. (WI Pest Sur.). ILLINOIS - First-brood survival survey completed. Infestation 0.8 percent in east area. Heaviest averages of 12.8 and 15.7 in northwest and west areas, respectively. Some first instar larvae in corn silks in west area, indicate egg laying well underway in some areas. (IL Pest Rpt.). OHIO - Adults in blacklight

traps in Wayne County increased rapidly, averaged 17.3 per trap per night August 5. (Rings). MARYLAND - European corn borer increased, but below normal activity, in Eastern Shore counties with some sweet corn in Queen Annes and Kent Counties sprayed due to newly hatched larvae in ears. Upper Eastern Shore fields with egg masses on 5-10 percent of plants on upper Eastern Shore. (U. Md., Ent. Dept.). PENNSYLVANIA - Averaged 3 larvae per stalk in 2 corn fields in Centre County. About 15 percent prepupae; others mostly early last instar. (Shetlar). Second generation larvae have begun to pupate in south counties. Larvae (and pupae) per 20 corn stalks by county: Adams 6; Allegheny 4; Crawford 2, 21; Cumberland one, one (one), (one); Elk 8; Lancaster (2); Lebanon (one); Lycoming 3, 2, 2; Northumberland one; Westmoreland 2, 8; York 4. (Kim).

NEW JERSEY - European corn borer adult activity past peak. Still on increase on sweet corn in far north, northwest, and northeast districts. Cool weather in all areas will retard hatch. (Ins.-Dis. Newsltr.). MASSACHUSETTS - Adults heavy in light traps in Barnstable, Norfolk, and Plymouth Counties. (Marini). NEW HAMPSHIRE - Very heavy in sweet corn stalks in small plots at Barnstead, Belknap County. Averaged 1-3 per plant. (Burger).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - TEXAS - Infested 30-80 percent of corn plants in 20 percent of Hale County fields, infested 10-30 percent in 50 percent of fields, and less than 10 percent in remaining 30 percent. Emergence pattern very erratic in panhandle, even within same field. Second generation emergence underway. Eggs in all stages of development, some hatched. First generation larvae to full-grown pupae in stalks. (Latham et al.). NEW MEXICO - Adult emergence began in east area, Curry and Roosevelt Counties. Some egg laying. (NM Coop. Rpt.).

FALL ARMYWORM (*Spodoptera frugiperda*) - GEORGIA - Full-grown larvae in whorls of field corn in Spalding County week ending July 30 (Morrill); light infestation in Habersham County (Marziliano, Harris). MISSISSIPPI - Heavy infestations and damage reported statewide. Populations of 100 percent infestation common. Feeding on grass nearby before moving to corn or sorghum. Extensively damaged pastures and rangeland. (Anderson). OKLAHOMA - Infestations 25-100 percent in sorghum in Washita, Caddo, and Canadian Counties. Averaged one per head in 10 percent of sorghum heads in Payne County. Moderate to heavy in heads and whorls in several southwest counties. (OK Coop. Sur.). NEBRASKA - Infested corn in association with *Pseudaletia unipuncta* (armyworm) in hilled areas of the southwest district. (Campbell). Complex of this pest, WESTERN BEAN CUTWORM (*Loxagrotis albicosta*), and 4 other noctuids infested 4-60 percent of ear tips in corn fields checked in Rock and Brown Counties. *S. frugiperda* dominant species with *L. albicosta* second most prevalent. (Bush). INDIANA - Young larvae in nearly every stalk in some double-cropped corn in Knox County week ending July 30, and in sweet corn in Lawrence County. (Sillings, York). RHODE ISLAND - Some problems in Newport County commercial field corn, much lighter than in 1975. (Chaves).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Infested up to 26 (averaged 6) percent in Dundy County. Eggs very few; most have hatched. Most larvae on silks but some have moved into husks. Corn in milk to early dough stage. (Taun, July 30 to Aug. 3).

Western bean cutworm larvae averaged 2 per plant on up to 90 percent of corn in some fields in Antelope and Pierce Counties. (Koinzan, July 30 to Aug. 3). Currently averaged less than 5 percent of plants infested in other fields in northeast district. (Witkowski).

CORN ROOTWORMS (*Diabrotica* spp.) - UTAH - WESTERN CORN ROOTWORM (*D. virgifera*) adults damaged silking corn in Salt Lake County. (Hassell). TEXAS - *D. virgifera* heavy in corn in Lipscomb County. Larval infestation previously 90 percent. (Patrick). OKLAHOMA - *Diabrotica* spp. larval damage moderate to heavy in several fields of second year corn in Texas and Cimarron Counties. Adult emergence continued, occasional pupa or full-grown larva found. *D. virgifera* 80-90 percent in most fields. (OK Coop. Sur.). NEBRASKA - *D. virgifera* and NORTHERN CORN ROOTWORM (*D. longicornis*) adults averaged 10+ per plant in late-planted corn field surveyed in Gage County. Moderate to heavy silk clipping did not interfere with pollination. (Miller).

NORTH DAKOTA - *Diabrotica* spp. adults averaged 3 per corn plant in Dickey, La Moure, Ransom, Richland, and Sargent Counties. (Scholl). MINNESOTA - *Diabrotica* spp. adult survey began, preliminary counts show populations in southeast district will remain high. Heaviest in Olmsted County, adults averaged 69,492 per acre. One field 98 percent lodged and severely damaged with average of 241,612 adults per acre. Field considered total loss. (MN Pest Rpt.). WISCONSIN - *Diabrotica* spp. adult population survey underway. Heavier than in previous years. No problem where crop rotation practiced. About one per corn plant in Dodge, Dane, Green, Lafayette, Iowa, Sauk, Waushara, Portage, Kenosha, Racine, Walworth, and Rock Counties. Infested every field checked. About 450-500 acres treated for adults in Outagamie County. (WI Pest Sur.).

IOWA - *D. virgifera* adults, 3-25 per plant, in corn statewide. Some silks cut, egg laying underway. Treatments reported from Adair, Adams, Benton, and Floyd Counties. (IA Ins. Sur.).

OHIO - *Diabrotica* spp. adults light to moderate in continuous corn fields surveyed in northwest area. *D. virgifera* adults averaged up to 2.56 per plant in Defiance County with as many as 7 on individual plants. Highest in extreme northern and western counties. Largest infestation of *D. longicornis* adults averaged 2.84 beetles per plant with maximum of 14 on some plants in Lucas County field. Adult averages per 50 plants in 2-3 continuous corn fields for *D. longicornis* (and *D. virgifera*) by county: Williams 26.0 (29.0), Fulton 26.7 (8.7), Lucas 50.0 (2.7), Defiance 5.5 (72.5), Henry 22.0 (40.0), Wood 5.0 (2.3), Paulding 2.7 (16.3), Hancock 76.8 (1.5). (Lewis, Szatmari-Goodman).

PENNSYLVANIA - Diabrotica longicornis adults active across State in corn silks and developing ears. Up to 15 adults per 20 plants in Centre County. (Kim). MARYLAND - D. longicornis adults moderate to heavy in Frederick, Prince Georges, Baltimore, Dorchester, and Cecil Counties; heaviest at 7 per silk in 60 acres of field corn near Frederick. Many fields with up to 50 percent of postpollination silks clipped short. (U. Md., Ent. Dept.).

BANKS GRASS MITE (Oligonychus pratensis) - OKLAHOMA - Moderate to heavy in many corn fields in Cimarron, Texas, and Beaver Counties, 6-9 leaves infested in some fields. Some fields treated. Heavy in Caddo County field. (OK Coop. Sur.). TEXAS - Increased in many grain sorghum fields in Knox County. (Boring). NEW MEXICO - Very heavy on milo near La Union, Dona Ana County. Controls ineffective. (NM Coop. Rpt.). COLORADO - Increased on corn in Pueblo, Crowley, Otero, Bent, and Prowers Counties. Moved up to eighth and tenth leaves. Very few leaves burned. (Schweissing).

SMALL GRAINS

DISEASES

BARLEY YELLOW DWARF VIRUS - NEW YORK - Positive confirmation in all oats submitted. Plants in recent outbreak apparently infected with strain that produces severe symptoms and is transmitted by several species of aphids. Additional sample from Capital District submitted. (NY Wkly. Rpt.).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Activity on grasses in extreme south area this season, now spread statewide. Egg masses heavy in most areas. (Boyer).

HAIRY CHINCH BUG (Blissus leucopterus hirtus) - MASSACHUSETTS - Nymphs and adults very heavy in lawns in Middlesex County. (Garland).

FORAGE LEGUMES

DISEASES

ALFALFA RUST (Uromyces striatus var. medicaginis) - KANSAS - First of season. Trace amounts in alfalfa field in Chase County. (Sim).

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Averaged 10 per square foot, defoliated 3 Muskogee County alfalfa fields. (OK Coop. Sur.).

PEA APHID (Acyrtosiphon pisum) - UTAH - Major problem on Juab County alfalfa. (Jones). COLORADO - Up to 600 per 100 sweeps of alfalfa in Arkansas Valley. (Schweissing). WISCONSIN - Generally light in alfalfa fields statewide. Occasionally 200+ per sweep in southeast area. Heavy in Sheboygan County. (WI Pest Sur.).

SOYBEANS

DISEASES

SOYBEAN CYST NEMATODE (*Heterodera glycines*) - TENNESSEE - Severely damaged 100 acres of soybeans in northeast Lawrence County. (Cagle, Lynch).

INSECTS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - ALABAMA - Increased in all soybeans inspected with counts on 60 feet of row from zero in several counties, up to high of 74 in Monroe County. This field with 20 percent defoliation. Damaged 75-acre field in Cherokee County with 25-30 percent defoliation. Controls applied. (McQueen). TENNESSEE - At control levels in few soybean fields in Franklin and Lincoln Counties. Most fields not at control level. (Cagle, Lynch). INDIANA - New adults began to appear in large numbers in many soybean fields in all south districts. Some egg laying week ending July 30. Adults 6 per plant in one field. (Edwards).

TWOSPOTTED SPIDER MITE (*Tetranychus urticae*) - IOWA - Over 150 per soybean leaflet, near economic levels, in Story and Boone Counties. Spotted or frosted leaflets evident. Damage expected by mid-August. (IA Ins. Sur.).

PEANUTS

INSECTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - FLORIDA - Infested peanut pegs and pods on 15 acres in northwest Levy County. Treatments required. (FL Coop. Sur.).

COTTON

INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Percent punctured cotton squares by county: Baylor, Wilbarger, Wichita 5-40; Fisher, Jones, Knox 25-60 (moderate to heavy); Ellis at least 25 (ranged 2-80); Hill, Johnson 15-98; Bell and Falls up to 50; Williamson, Milam 30-53. Adult emergence continued in fields in Rolling Plains and north-central area. Adults 2 per 4 traps in Baylor County. (Boring et al.). OKLAHOMA - Maximum percent punctured cotton squares by county: Canadian 24, Jackson 36, Tillman 45, Kiowa 70, Caddo 48, Washita 72. Pheromone trap catches by county (and number of traps): Harmon one (34), Jackson 7 (18), Greer 9(25). Adults 5-35 per 100 blooms in many fields in southwest counties. (OK Coop. Sur.). LOUISIANA - Punctured squares continued to increase in infested fields and appeared in new fields. (Tynes).

MISSISSIPPI - Percent punctured cotton squares (and acreage) due to boll weevil by county: Issaquena one (800), Tate one (1,600), Carroll 4 (2,600), Lowndes 2 (100), Copiah 15 (800), Montgomery 4 (600), Sharkey one (100), Noxubee 4 (2,000). Light statewide, significant increase expected in most areas. (Anderson). ALABAMA - Generally light, 1-25 percent of cotton squares punctured statewide.

Controls for boll weevil good; little control necessary in much of north area. (Freeman et al.). GEORGIA - Second field generation emerged in south area week ending July 30, still unusually light on cotton in north area. Adults in pheromone traps by county: Crisp 6 and Tift 5. (Lambert). TENNESSEE - Counts light to heavy in several cotton fields in Haywood County. Punctured squares up to 25 percent in some fields. Pupae easily found in squares on ground. Still between generations in west area. "Hatchout" expected August 8. Erratic infestations expected due to varied cotton growth. Percent punctured squares 2-8 (average 3) in Franklin and Lincoln Counties. (White et al.).

BOLLWORMS (Heliothis spp.) - TEXAS - BOLLWORM (H. zea) status on cotton by area: North-central and Blacklands hatch continued; Ellis, Kaufman, and Collin 5-15 eggs and larvae per 100 plants in treated fields; Jones and Fisher 60 adults per night in light traps, Jones, Fisher, and Knox 25-40 percent square damage in few fields; Baylor, Wichita, and Wilbarger mostly 5-15 (few up to 40) larvae per 100 plants, up to 6 percent square damage; Lubbock few eggs in one field; El Paso Valley 2-6 eggs per 100 terminals, 2-5 percent larvae; Clint and Fort Hancock 10-12 larvae per 100 terminals. (Hoelscher et al.). OKLAHOMA - H. zea eggs 0-23 and larvae 0-9 per 100 cotton terminals and damaged squares 0-18 percent in Kiowa, Jackson, and Tillman Counties. (OK Coop. Sur.).

LOUISIANA - Predicted increase in egg laying by H. zea and TOBACCO BUDWORM (H. virescens) adults verified July 27. Eggs 30 per 100 cotton plants week ending July 30, in treated Ouachita Parish fields and only 2 eggs per 100 plants in fields not yet treated due to beneficial insect activity. Up to 25 eggs per 100 plants in Natchitoches and Red River Parishes. (Glover, Powell). Current egg laying by both species heaviest in Red River Valley, from central area northward. No eggs in some fields. Egg laying more spotted in northeast area, but will increase. (Tynes). MISSISSIPPI - Counts 1-10 percent on cotton in Tate, Sunflower, Issaquena, Quitman, Bolivar, Washington, Lowndes, Noxubee, Copiah, Montgomery, and Sharkey Counties. H. virescens increased significantly in rainy south delta counties. (Anderson). ALABAMA - Adult flights increased with eggs on 1-10 per 100 cotton terminals. Developing larvae statewide at 1-5 per 100 stalks. Adult flight, mainly bollworm, still in progress. Bollworms of lesser importance to date than in past 5+ years. (Lemons et al.).

FALL ARMYWORM (Spodoptera frugiperda) - MISSISSIPPI - Fed on cotton in Yalobusha and Calhoun Counties. Apparently moved from nearby sorghum to cotton. (Anderson).

TOBACCO

INSECTS

GREEN PEACH APHID (Myzus persicae) - WISCONSIN - Moderate to heavy on tobacco in Dane and Rock Counties. Significant portion of acreage treated. (WI Pest Sur.).

POTATOES, TOMATOES, PEPPERS

DISEASES

PHYTOPHTHORA LATE BLIGHT (Phytophthora infestans) - NEW YORK - Outbreak on potatoes in muck area of Savannah, Wayne County, held in check by controls and dry weather week ending August 2. No blight on new growth. Additional cases reported from Steuben and Wyoming Counties and muck areas of Elba, Genesee County, and Canastota, Madison County, due to excess moisture hindering control applications. (NY Wkly. Rpt.).

INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MINNESOTA - Reported on potatoes from Red Lake and Norman Counties in north-west district. Required controls in several fields. (MN Pest Rpt.). NEW HAMPSHIRE - Larvae, 10-25 per plant, severely damaged potatoes at Barnstead, Belknap County. (Burger).

POTATO STEM BORER (Hydroecia micacea) - MAINE - Adults in black-light traps in Portland, Cumberland County, and Skowhegan, Somerset County. (Gall).

CABBAGE LOOPER (Trichoplusia ni) - RHODE ISLAND - Problems persist in commercial potato fields in Washington County. (Partyka).

GREEN PEACH APHID (Myzus persicae) - OREGON - New flight of alates to Malheur County potatoes. Controls needed. Very little leaf roll. (Burr). COLORADO - Ranged 10-200 per 100 sweeps of potatoes in Otero County. (Schweissing). PENNSYLVANIA - Adults heavily injured all plants in potato field in Allegheny County. (Tetrault). MAINE - Showing up regularly in yellow pan traps in central area and south Aroostook County where migration began earlier than usual. Should appear farther north next 14 days. (Gall).

BEANS AND PEAS

DISEASES

BEAN MOSAIC VIRUS - PENNSYLVANIA - Infected 30-100 percent of all early snap bean plants statewide. Virus transmitted by BEAN APHID (Aphis fabae) during July. (Tetrault).

PEANUT STUNT VIRUS - TENNESSEE - Damaged all types of green beans in many areas of State. (Williams).

PHASEOLICOLA HALO BLIGHT (Pseudomonas phaseolicola) - MICHIGAN - Infected red kidney beans week ending July 30. Controls urgently needed to protect plants and prevent secondary infection of developing pods. (Potter).

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - COLORADO - Up to 15 per bean plant on 0-25 percent of plants in fields checked in Pueblo County. (Schweissing). NEBRASKA - Still moderate on dry beans in Morrill County. (Hagen).

BEAN APHID (Aphis fabae) - PENNSYLVANIA - See BEAN MOSAIC VIRUS under this section.

COLE CROPS

DISEASES

CABBAGE YELLOWS (Fusarium oxysporum var. conglutinans) - WISCONSIN - Generally infected susceptible cabbage variety in Racine County. Plants stunted, upper leaves wrinkled with yellow cast, and some already dead. Vascular tissue showed brown discoloration. (WI Pest Sur.).

INSECTS

CABBAGE LOOPER (Trichoplusia ni) - RHODE ISLAND - Problems persist on commercial and home-grown cole crops in Washington County. (Partyka).

CUCURBITS

DISEASES

WATERMELON MOSAIC VIRUS - PENNSYLVANIA - Infected all plants in field of Harvest Queen muskmelons in Allegheny County. Virus transmitted by MELON APHID (Aphis gossypii). (Tetrault).

CUBENSIS DOWNY MILDEW (Pseudoperonospora cubensis) - NEW MEXICO - Damage moderate to watermelons, squash, and cantaloups in Lea County. (NM Coop. Rpt.).

INSECTS

STRIPED CUCUMBER BEETLE (Acalymma vittata) - NEW HAMPSHIRE - Averaged 2-5 per plant on cucumber foliage at Barnstead, Belknap County. (Burger).

MELON APHID (Aphis gossypii) - PENNSYLVANIA - See WATERMELON MOSAIC VIRUS under this section.

DECIDUOUS FRUITS AND NUTS

INSECTS

PEACHTREE BORER (Sanninoidea exitiosa) - UTAH - Injury general in older peach trees in most home and many commercial orchards in north and central areas. (Knowlton). MICHIGAN - Pheromone trap catches indicated peak activity at Hart and Shelby area, Oceana County, week ending July 30. (Brunner).

CODLING MOTH (Laspeyresia pomonella) - UTAH - Damaged apple orchards in Juab County and home orchards in Salt Lake County. (Jones, Hassell). MASSACHUSETTS - Trap catches half that of numbers caught previous period in Berkshire, Franklin, Hampden, and Hampshire Counties. Should no longer be problem in another 7-14 days. (Wilder).

A TORTRICID MOTH (Platynota idaeusalis) - PENNSYLVANIA - Second generation began; averaged about 15 adults per pheromone trap in south counties for week of August 2. (Tetrault).

APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - Counts for period by county: Hennepin 45; Scott 11 at Shakopee; Faribault 11 at Winnebago; Brown 13 at New Ulm. (MN Pest Rpt.). CONNECTICUT - Adults still emerging. Injury evident on unsprayed early varieties of apples. (Savos). MASSACHUSETTS - Adults more than doubled on red spheres and yellow board traps this period in Berkshire, Franklin, Hampden, and Hampshire Counties. (Wilder).

PEAR PSYLLA (Psylla pyricola) - RHODE ISLAND - Several heavy infestations on fruit trees in landscape situations in Kent County. Under control in well-maintained commercial orchards. (Larmie).

EUROPEAN RED MITE (Panonychus ulmi) - OHIO - Conspicuous "bronzing" of Red Delicious apple foliage began in Fairfield County orchard. Mite averages per leaf: 16.7 on these apples and 1-2 on Jonathan apple trees in same planting. (Holdsworth). MASSACHUSETTS - Heavy in many apple orchards in Hampshire, Franklin, and Hampden Counties. Especially heavy, averaged 5 per leaf on Red Delicious. (Hislop).

FALL WEBWORM (Hyphantria cunea) - ALABAMA - Infested pecan and willow trees in Fayette, Jefferson, and other north counties. (Wilson et al.). SOUTH CAROLINA - Scattered infestations on pecans in Chesterfield County and pecan orchard in Lexington County. (Pollet, Jones). OKLAHOMA - Heavy on pecan trees in McCurtain, Choctaw, Le Flore, and Pontotoc Counties. Light to moderate in Murray County. (OK Coop. Sur.).

PECAN NUT CASEBEARER (Acrobasis nuxvorella) - NEW MEXICO - First generation pupae at Carlsbad, Eddy County; second generation larvae at Roswell, Chaves County. (NM Coop. Rpt.).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Adults emerged in Douglas County; treatment of walnuts needed by August 10. Treatment needed few days earlier at Riddle. (Passon). First adult trapped July 27 at Dundee, Yamhill County. (Larson).

CITRUS

INSECTS

BROWN SOFT SCALE (Coccus hesperidum) - CALIFORNIA - More complaints than usual of adults on citrus trees at Sacramento, Sacramento County. Parasite balance apparently upset. (CA Coop. Rpt.).

SMALL FRUITS

DISEASES

BLUEBERRY ANTHRACNOSE (Gloeosporium sp.) - MICHIGAN - Infected blueberries at Grand Junction, Van Buren County, week ending July 30; probably in other areas also. (Ramsdell).

INSECTS

A TORTRICID MOTH (Sparganothis sulfureana) - MASSACHUSETTS - Larvae damaged many cranberry bogs in Plymouth County. Sprays unsuccessful. (Tomlinson).

SOUTHERN RED MITE (Oligonychus ilicis) - MASSACHUSETTS - Increased on cranberry bogs at Wareham and Carver, Plymouth County. Sprays unsuccessful. (Tomlinson).

ORNAMENTALS

INSECTS

A YUCCA WEEVIL (Scyphophorus acupunctatus) - FLORIDA - Three larvae collected from stems of Yucca sp. August 2, 1976, and 3 adults from same plants August 4 in nursery at Oviedo, Seminole County. Collected by H.M. Van Pelt. Determinations of larvae by G.W. Dekle and of adults by S.A. Fragoso. This is a new county record. (FL Coop. Sur.).

BAGWORM (Thyridopteryx ephemeraeformis) - TEXAS - Defoliated 50 percent of Pfitzer juniper in Motley County. Damaged various ornamentals across panhandle. (Boring, Patrick).

EUONYMUS SCALE (Unaspis euonymi) - TEXAS - Heavily infested euonymus in Wichita and Wilbarger Counties. (Boring).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - MAINE - Greatest problem this spring. In large percentage of greenhouses on carnations, dahlias, impatiens, salvia, and others. Found outdoors on clematis. Bronzed and yellowed foliage where untreated. (Gall).

FOREST AND SHADE TREES

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - MINNESOTA - Confirmed at Cloquet, Carlton County. First reported incidence in city and second in county. (MN Pest Rpt.).

INSECTS

WESTERN SPRUCE BUDWORM (Choristoneura occidentalis) - IDAHO - Damage heavy on 30 percent of new foliage on 50 percent of white fir trees near McCall, Valley County, July 24. Also caused about 5 percent damage to new foliage on lodgepole and ponderosa pine, western larch, and Engelmann spruce. (Kulhavy).

ASPEN BLOTCHMINER (Lithocolletis tremuloidiella) - WISCONSIN - Injury severe on aspen in Oneida and Vilas Counties, foliage yellowing. (WI Pest Sur.).

PALE WEEVIL (Hylobius pales) - NEW JERSEY - Problems increased in commercial Christmas tree plantings. Scotch pine and Norway spruce more injured than white pine. (Ins.-Dis. Newsltr.).

WHITE PINE WEEVIL (Pissodes strobi) - NEW JERSEY - New adults on pine in Somerset County. Pupae in infested leaders. (Ins.-Dis. Newsltr.).

LARCH SAWFLY (Pristiphora erichsonii) - WISCONSIN - Defoliation severe in scattered tamarack stands across north counties. Larvae in cocoons in duff. (WI Pest Sur.).

MIMOSA WEBWORM (Homadaula anisocentra) - IOWA - First-generation larvae and pupae on locust trees. Second-generation adults laying eggs. Some second-generation larvae and webbing in Story County. First-generation damage heavy. (IA Ins. Sur.). PENNSYLVANIA - Five larvae found on honeylocust at Lebanon, Lebanon County, by W. Glosser, July 26, 1976. Determined by C. Valley. This is a new county record. (Glosser). MASSACHUSETTS - First of season on trees and shrubs in Middlesex County. (Garland).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Adults active at Las Cruces, Dona Ana County. Damage unusually light statewide, especially along upper Rio Grande in Bernalillo, Santa Fe, and Taos Counties. Second-generation egg laying will begin in south area. (NM Coop. Rpt.). ARKANSAS - Webs up to 4 feet in diameter in Ozark and Ouachita mountain areas of northwest and west-central sections. (Boyer). TENNESSEE - Feeding on sycamore tree foliage in Davidson County, populations and damage light. (Stinnett).

MAPLE LEAFCUTTER (Paraclemensia acerifoliella) - MICHIGAN - Damaging populations in Benzie and Manistee Counties week ending July 30. (Norman). Larvae 2-10 per leaf on 95 percent of leaves on infested trees. Severe browning of large maple stands obvious. (Kennedy).

ASIATIC OAK WEEVIL (Cyrtepidomus castaneus) - WEST VIRGINIA - Foliar damage 50-60 percent on all oak species on about 1,500 acres of forest land in Pocahontas County July 29. (Miller).

ELM LEAF BEETLE (Pyrrhalta luteola) - CALIFORNIA - Increased in scattered street elms at Sacramento, Sacramento County. Treatments delayed but being applied citywide. Majority of large elms appear better than in several years. Dooryard trees still source of beetles. (CA Coop. Rpt.). UTAH - Damage severe to San Juan County elms and often conspicuous on elms in Salt Lake, Weber, Washington, and Cache Counties. (Cox, Knowlton). TEXAS - Heavily damaged

Siberian elms in Wichita County. (Boring). TENNESSEE - Eggs and larvae on elm leaves in central and west areas. (Sauve, Kelly). MISSISSIPPI - Infestation near 100 percent on Copiah County elms; defoliation extensive. (Anderson).

AN OAK SAWFLY (Caliroa quercuscoccineae) - WEST VIRGINIA - Larvae heavily damaged (50-80 percent) scattered red oak trees on about 200 acres in Putnam County July 27. (Cole). Adults collected on red oak August 2, 1976. Collected and determined by J.D. Hacker. This is a new county record. Heavily damaged about 1,000 acres of red and black oaks in Pipestem State Park. Adults active and laying eggs. (Hacker, Miller).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - UTAH - Numerous and irritating statewide. Heavy on some beef herds in Kane and Washington Counties. (Knowlton). TEXAS - Heavy in Knox County. (Boring). OKLAHOMA - Ranged 200-400 per head on Mayes County cattle. (OK Coop. Sur.). IOWA - Increased in most cattle herds. Ranged 120-200 (averaged 146) in untreated Story County herd. (IA Ins. Sur.). INDIANA - Adults 10-200+ (averaged about 65) per side in herd of 10 cattle in Tippecanoe County week ending July 30. (Meyer). MISSISSIPPI - Heavy statewide. Counts per head by county: Newton 300, Oktibbeha 500, Pike 400. (Anderson).

FACE FLY (Musca autumnalis) - MISSISSIPPI - Still problems in north area, controls initiated. (Anderson). INDIANA - Ranged 5-30 (averaged 13) per face in herd of 10 cattle in Tippecanoe County week ending July 30. (Meyer). IOWA - Continued increase on pastured cattle. Ranged 2-24 (average 16.5) per head in untreated herd in Story County. Averaged 4.8 and 13.6 per head in 2 treated cattle herds in Story County. (IA Ins. Sur.).

MOSQUITOES - FLORIDA - Psorophora columbiae severely annoyed people in yards near Newberry, Alachua County, especially during evening. (FL Coop. Sur.). NEW HAMPSHIRE - Aedes vexans larvae heavy in many south woodland and pasture areas following heavy rains. Coquillettidia perturbans still dominant inland species in light traps at Epping, Rockingham County. (Burger). MAINE - Much annoyance from A. vexans and C. perturbans in central area. Present brood of A. vexans from heavy rainfall during past 21 days. A. triseriatus noted in spotty areas. (Gall).

TABANID FLIES (Chrysops spp.) - NEW HAMPSHIRE - Still very heavy in some south and central areas. C. vittatus very heavy at Durham, Strafford County, and Concord, Merrimack County. C. macquarti and C. moechus locally heavy at Concord. (Burger).

BLACK FLIES - MAINE - Massive infestations since June at Brownville, Piscataquis County. (Gall).

SHEEP KED (Melophagus ovinus) - UTAH - Common pest of sheep herds on Indian lands in San Juan County. (Cox).

AMERICAN DOG TICK (Dermacentor variabilis) - TENNESSEE - This species and BROWN DOG TICK (Rhipicephalus sanguineus) still heavy in many areas. Heavy in Knox, Hamblen, and Bradley Counties. (Williams, Gordon). OKLAHOMA - R. sanguineus heavy on dogs in Jefferson County. (OK Coop. Sur.).

EAR TICK (Otobius megnini) - UTAH - Problem to livestock herds on Indian Lands in San Juan County. (Cox).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

A BRACONID WASP (Lysiphlebus testaceipes) - OKLAHOMA - Parasitism up to 70 percent, caused Schizaphis graminum (greenbug) decline on sorghum in southwest counties. Parasitism 1-5 percent in panhandle counties. Rapid increase expected. (OK Coop. Sur.).

A EULOPHID WASP (Tetrastichus incertus) - WEST VIRGINIA - Adults reared from Hypera postica (alfalfa weevil) larvae collected May 12, 1976, in Hampshire and Morgan Counties. This is first recovery since release in these counties May 1974. (Hacker).

AN ICHNEUMONID WASP (Bathyplectes curculionis) - WEST VIRGINIA - Adult reared from Hypera postica (alfalfa weevil) collected May 3, 1976, in Hancock and Brooke Counties. This is first recovery in these counties since release May 1975. (Hacker).

AN ICHNEUMONID WASP (Bathyplectes anurus) - WEST VIRGINIA - Adult reared from Hypera postica (alfalfa weevil) collected May 3, 1976, in Ohio, Wood, and Pleasants Counties. This is first recovery in these counties since release May 1975. (Hacker).

FEDERAL AND STATE PROGRAMS

INSECTS

GRASSHOPPERS - OREGON - Melanoplus sanguinipes and Camnula pellucida economic on about 10,000 rangeland acres in Baker County between Keating and Medical Springs. Controls planned. (Goeden, Gorham). TEXAS - Grasshopper damage moderate to heavy to rangeland in parts of Motley and Young Counties. (Boring).

GYPSY MOTH (Lymantria dispar) - PENNSYLVANIA - Degree of defoliation by July 20 in Carbon, Lackawanna, Luzerne, Monroe, Pike, Susquehanna, Wayne, and Wyoming Counties: Heavy on 470,000 acres, moderate on 34,000 acres, and light on 5,000 acres. (Proseus). RHODE ISLAND - Total of 2,500 acres of forest land treated cooperatively compared with 80,000+ acres in 1974. Present population lightest since 1974. (Relli).

JAPANESE BEETLE (Popillia japonica) - ALABAMA - Adults emerged and fed on variety of plants on Cumberland Mountain near Scottsboro, Jackson County. Controls applied. (Pitts). MARYLAND - Still active on silks of field corn in Harford, Baltimore, and Frederick Counties, heaviest at 3 per silk in 60 acres near Thurmont. (U. Md., Ent. Dept.). PENNSYLVANIA - Adults feeding on silks in Adams, Crawford, Cumberland, Fayette, Lebanon, and York Counties. Damage light to moderate statewide. (Kim). CONNECTICUT - Very heavy on grasses, shrubs, and trees in some areas. (Savos). MASSACHUSETTS - Problem in Plymouth County, feeding on grape, raspberry, and blueberry. (Tomlinson).

SCREWORM (Cochliomyia hominivorax) - Total of 630 cases reported from continental U.S. July 18-24 as follows: Texas 627, New Mexico 2, Arizona one. Total of 203 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 331 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 152,630,700 as follows: Texas 125,907,900; New Mexico 5,796,000, Arizona 20,926,800. Total of 5,341,500 sterile flies released within Barrier of Mexico. (Vet. Serv.).

HAWAII PEST REPORT

New State Records - Many adults of a EULOPHID WASP (Aneristus sp.) recovered from Saissetia coffeae (hemispherical scale) on Cycas revoluta (sago cycas) collected at Honolulu, Oahu, by S. Higa, May 17, 1976. Determined by G. Gordh. Specimens were not A. ceroplastae, only other Aneristus species recorded in State. (Higa).

General Vegetables - CARMINE SPIDER MITE (Tetranychus cinnabarinus) counts and damage heavy. Severe counts and damage on 5,000 square feet of peanuts at Waianae, Oahu; peanuts plowed under before harvest. Heavy counts (100 percent of foliage colonized) and moderate damage on 5,000 square feet each of tomatoes and cowpeas at Waianae and on 0.5 acre of eggplants at Lualualei and Waiawa, Oahu. Moderate (30-50 percent of foliage infested) on 0.25 acre of yardlong beans at Waianae and Waiawa. Few lady beetle or mite predators observed in all infestations. LEAFMINER FLIES (Liriomyza spp.) heavy (75-90 percent of leaves heavily mined) on one acre of green onions at Lualualei and 1.25 acres of tomatoes at Lualualei, Waianae, and Waiawa. Green onion field abandoned due to 20+ mines per leaf on 90 percent of leaves. Moderate on pole beans (30 percent of foliage; 50-100 mines per leaflet) at Waianae. BROAD MITE (Polyphagotarsonemus latus) heavy (60-100 percent of terminals deformed) on 1.25 acres of bell peppers at Lualualei. Damage moderate. (L. Nakahara).

Turf and Pasture - Several specimens of a MEALYBUG (Brevinnia rehi) collected from bermudagrass at Makakilo, Oahu, by R. Mau, during June 1976. Second record of this mealybug on Oahu since single specimen first collected in State October 1975. (Beardsley).

Man and Animals - Single large female of a VESPID WASP (Vespula vulgaris) collected at large at Hosmer's Grove in Haleakala National Park, Maui, at 6,600 feet June 15, 1976; only specimen observed in area. Aside from nest discovered here in October 1974, this is second record for this location. Hosmer's Grove is about 3 miles from Olinda, Maui, discovery site. (Beardsley).

Miscellaneous - GIANT AFRICAN SNAIL (Achatina fulica) heavy along road shoulders at Poipu, Kauai, following early morning showers. (Sugawa).

DETECTION

NEW STATE RECORD

INSECTS

A EULOPHID WASP (Aneristus sp.) - HAWAII - Oahu Island. (p. 516).

NEW COUNTY RECORDS

INSECTS

AN OAK SAWFLY (Caliroa quercuscoccineae) - WEST VIRGINIA - Putnam (p. 514).

MIMOSA WEBWORM (Homadaula anisocentra) - IOWA - Lebanon (p. 513).

A YUCCA WEEVIL (Scyphophorus acupunctatus) - FLORIDA - Seminole (p. 512).

CORRECTIONS

CPPR 1(25):336 - COMMON LEAF SPOT (Pseudopezia medicaginis) ... should read COMMON LEAF SPOT (Pseudopeziza medicaginis) ...

CPPR 1(26):363 - CALIFORNIA OAKWORM (Phryganida californica) ... should read CALIFORNIA OAKWORM (Phryganidia californica)...

CPPR 1(29):435 - SOUTHERN CORN ROOTWORM (Diabrotica undecimpuncta howardi) ... should read SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) ...

CPPR 1(29):438,440 - ZIMMERMAN PINE MOTH (Dioryctria zimmermanni) ... should read ZIMMERMAN PINE MOTH (Dioryctria zimmermani) ...

CPPR 1(30):453 - ARMYWORM (Pseudaletia unipuncta) - SOUTH CAROLINA ... Sumter County ... should read Florence County ... (Douglass).

LIGHT TRAP COLLECTIONS	Temperature - F	Humidity - %	Precipitation - inches	Type of trap	Type of insect	Crop
SOUTH CAROLINA (Counties) Florence 7/30-8/4 Orangeburg 8/1-5				BL	BL	1193 2900
WEST VIRGINIA Monroe 8/2 Randolph 8/2				BL	BL	1193 2900
WISCONSIN Evansville 7/27-8/2 Mazomanie 7/28-8/4				BL	BL	1193 2900

Plant Importation and Technical
Support Staff

The following is a list of exotic plant pests which quarantine authorities have recently prevented from entering the United States.

<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Bradybatus subfasciatus</u> (Gerstacker) a curculionid beetle	adult	with 50 pounds of maple seed	Hoboken Italy	MA
<u>Buprestis sp.</u> a buprestid beetle	larval	in wood of 4 cases with ceramics	San Juan Spain	PR
<u>Cerambyx sp.</u> a cerambycid beetle	larval	under bark on 16 logs	Norfolk Africa	VA
<u>Coptotermes sp.</u> a termite	adult	in 5 wood vans of household goods	San Francisco Guam	CA
<u>Coptotermes sp.</u> a termite	all	in 26 boxes of Ficus plants	San Francisco Guatemala	CA
<u>Ctenopseustis obliquana</u> (Walker) a tortricid moth	larval	in fruit of 2,000 box apple shipment	Hawaii New Zealand	HI
<u>Hoplia sp.</u> a scarabaeid beetle	adult	with 145 cartons of dried flowers	New Orleans South Africa	AL
<u>Stephanopachys quadricollis</u> (Marseul) a bostrichid beetle	adult	under bark on 5 pallets of canned food	San Juan Spain	PR

WEATHER OF THE WEEK ENDING AUGUST 8

Reprinted from Weekly Weather and Crop Bulletin Supplied by National Weather Service, NOAA.

HIGHLIGHTS: Abnormally low temperatures cooled the Northeast early in the week. Later, the cooling trend pressed over other portions of the Nation. Flagstaff, Arizona, plunged to a low of 35 degrees while nearby Casa Grande hit the Nation's high of 113 degrees. Atlantic coast weather observers focused on the first hurricane of the season, Belle.


TEMPERATURE AND PRECIPITATION: A high pressure system over North Dakota spread eastward with mostly clear skies and cool temperatures early Monday morning. The mercury slipped to the 40's and 50's over a wide area from the northern Plains into the northern and middle Atlantic States. Philipsburg, Pennsylvania, fell to the low for the Nation with only 34 degrees, while local record lows included Albany, New York, at 48 degrees, Pittsburgh, Pennsylvania, at 47 degrees, Binghamton, New York, at 48 degrees, and Ohio's Akron and Columbus at 50 degrees. The break from summer heat remained over most of the Nation throughout the day. Maximum temperatures lingered in the 80's, with 70's in the Great Lakes area, through the Ohio Valley, the northern half of the Atlantic Coast States, New England, and the Pacific Northwest. A few readings in the 60's covered the upper Great Lakes region, while the 90's were restricted to Texas and other portions of the Southwest. Widely scattered thundershowers accompanied cool temperatures over the Rockies, the Plateau, and the Pacific Northwest. Other thunderstorms stretched from the southern half of the Atlantic coast through the gulf coast area. Scattered thundershowers provided some relief from the 90 degree temperatures in southwestern Texas.

The massive high pressure center pushed eastward over Illinois dropping temperatures to record lows over a large portion of the Nation through Monday night and early Tuesday morning. Autumn-like readings encompassed the New York communities of Newcomb with only 29 degrees, the Nation's low, and Saranac Lake at 33 degrees; while Philipsburg, Pennsylvania, experienced another low reading of 35 degrees. Scattered showers and thunderstorms rumbled from the Rockies, through the Coastal Range, and the Cascades. Thunderstorms also spread along the Gulf of Mexico coast, through Florida, and up the southern half of the Atlantic coast. In a 6-hour period, about 3.5 inches of rain drenched Savannah, Georgia, and a little more than 2 inches fell on Clovis, New Mexico. Skies remained fair through the Appalachians, the Great Lakes region, the eastern portion of the Plains, and over the northern two-thirds of the Mississippi and Ohio Valleys into Tennessee, as the high pressure center brought cooler air from southeastern Canada. Fair skies in the Southwest allowed Tuesday afternoon temperatures to reach and surpass the 100 degree mark in the Desert area. Casa Grande, Arizona, scored the high reading for the Nation with 110 degrees. High pressure areas controlled the weather across much of the Nation Wednesday and brought mostly sunny skies and pleasant temperatures. Early morning readings dipped to lows of 38 degrees at Reno, Nevada, 39 degrees at Flagstaff, Arizona, and Gunnison, Colorado, 47 degrees at Toledo, Ohio, and Texas lows of 63 degrees at Houston Airport and 64 degrees at Beaumont.

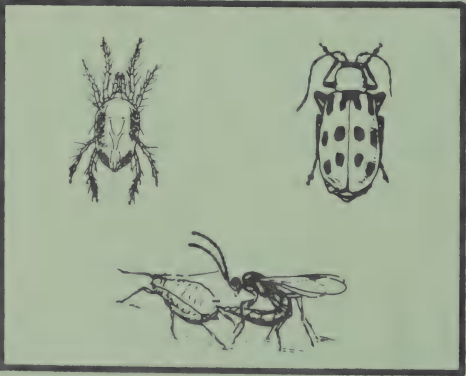
Fair and mild weather continued from the northern and middle Atlantic States to the middle and lower Mississippi Valley with afternoon readings in the 70's and 80's. Nearly clear skies reached from the western Plains into the California interior. Another cool Canadian air mass moved into the North Central States Thursday and kept temperatures in the middle 60 to 70-degree range over eastern Montana, the Dakotas, Minnesota, and northern Wisconsin. In contrast, readings ranged from the 70's to middle 80's in Nebraska and Iowa. Showers and thundershowers preceded the cooler air through the central Plains, the middle Mississippi Valley, and into the Great Lakes region. Scattered thundershowers stretched along the gulf coast, as a few rain-showers fell in the Pacific Northwest. Mostly clear skies and seasonable temperatures prevailed over California, the southern two-thirds of the Rockies, and the southern portion of the Plains. Partly cloudy to cloudy conditions remained throughout the rest of the Nation. The official low plunged to 35 degrees at Flagstaff, Arizona, and ended the growing season over part of the area for vegetables. A cold front stretched from New England through the Ohio Valley, into the central Plains early Friday morning and triggered showers and thundershowers in those areas. A cooler air mass followed to the north of the cold front and resulted in record lows of 38 degrees at Sault Saint Marie, Michigan, 43 degrees at Bismarck, North Dakota, and 46 degrees at Huron, South Dakota. Sunny skies and seasonable temperatures covered most of the western half of the Nation Friday afternoon. Arizona hit record highs of 105 degrees in Safford and 113 degrees in Casa Grande. Weekend weather included high winds, some rain, and unseasonably cool temperatures. Major attention focused on Hurricane Belle, the first hurricane of the season, as she plowed her way along the Atlantic Coast.

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Cooperative PLANT PEST REPORT

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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
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COOPERATIVE PLANT PEST REPORT**HIGHLIGHTS**Current Conditions

ARMYWORM heavy on corn in several Kansas fields. Economic infestations expected to continue in corn in southwest Nebraska. Heavy infestation on grass in Coastal Plain of North Carolina. Heavy defoliation of corn in Gray and Carson Counties, and up to 12 per plant in Hale County, Texas. (p. 525).

GREENBUG infestations heavy on sorghum in Oklahoma. Extensively damaged sudangrass in one area in California. (p. 526).

COMMON MAIZE RUST infection general throughout Kansas. (p. 527).

SOUTHWESTERN CORN BORER on corn in Kansas heaviest observed in three years in one area. (p. 528).

Rare incidence of OAT LOOSE SMUT on oats in Michigan. (p. 530).

Heavy FALL ARMYWORM infestation on sorghum in Washita County, Oklahoma. (p. 528). Treatments needed on grasses throughout Arkansas. Larvae 6-8 per square foot on rice in some areas and on various crops in delta counties of Mississippi. (p. 530). Treatments applied to 2,000 acres of soybeans in Obion County, Tennessee. (p. 531).

MEXICAN BEAN BEETLE economic in Alabama soybeans. Third generation, usual cause of greatest damage, expected in Virginia. (p. 531).

CABBAGE LOOPER heavy in previously treated cotton in Oklahoma. (p. 533).

SPRUCE TWIG BLIGHT heavier in Rhode Island area than in past 3 years. (p. 534).

Record elm loss due to DUTCH ELM DISEASE confirmed in Minnesota. (p. 534).

JAPANESE BEETLE treated in soybeans in Tennessee. (p. 537).

● ORIENTAL FRUIT FLY male taken within the Mediterranean Fruit Fly trapping area in California. (p. 537).

Detection

BLACK VINE WEEVIL is new for Hawaii (p. 528).

For new county and island records, see page 539.

Reports in this issue are for the week ending August 13, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ARMYWORM (*Pseudaletia unipuncta*) - NEW MEXICO - Problem on sorghum, sudan, and possibly corn northwest of Mesilla, Dona Ana County, and on sorghum in Deming area, Luna County. (NM Coop. Rpt.). TEXAS - Up to 12 per corn plant in one Hale County field. Much defoliation in Gray and Carson Counties. (Morrison, Patrick). OKLAHOMA - Infested 10 percent of ears in one northern Cimarron County corn field. (OK Coop. Sur.). KANSAS - Heavy counts feeding on corn leaves in 2 Stevens County fields, one Lane County field, and one field in Sand Hill area south of Garden City along Finney and Kearny County lines. Larvae in last field mostly full grown, some pupation. Corn field in Pawnee County treated 14 days earlier showed damage ranging from trace feeding to all leaves consumed (except midribs) depending on area in field. Damage heavy in many fields in Fellsburg area, Edwards County. All problem infestations to date associated with grassy fields. (Bell).

NEBRASKA - Armyworm infestations generally decreased in severity statewide due to pupation. Isolated fields with small larvae still found. Scattered infestations on corn in Hall and Merrick Counties, populations decreased due to pupation and viral disease. (Raun). Infestations still in southwest district, some larvae present in most fields. Some pupation noted, first-instar larvae still noticeable. Economic infestations possible for 7-14 days. (Campbell, Boxler). IOWA - Larvae averaged one per plant on field corn in Franklin County, lower leaves consumed. (DeWitt).

NORTH CAROLINA - Armyworm infestation very heavy, 30+ per square foot, for third week in Coastal bermudagrass over entire southern Coastal Plain. Defoliation 8-100 percent in 5 Sampson County fields over 3-40 acres. Damaged 2-5 acres in 8 Columbus County fields. Numerous observations in fescue pastures and golf courses in other southern counties. Damaged about 100 acres of Tyrrell County corn. Some additional damage in Beaufort County. (Glover et al.). MARYLAND - Completely defoliated 10 acres of corn in lower Caroline County after consuming all grasses in bordering no-till soybean field; most larvae dead, apparently from virus disease. Larvae feeding in grasses in other no-till soybean fields in Caroline County. (U. Md., Ent. Dept.).

CORN EARWORM (*Heliothis zea*) - TEXAS - In sorghum heads in isolated fields in Howard and Midland Counties. Larvae averaged 9 per head in some fields in Tom Green and Runnels Counties, 25 or more in some heads. Heavy in whorls in Stonewall County. (Neeb et al.). OKLAHOMA - Percent sweet corn ears infested, 50-100 in Muskogee County. Light in peanuts in Caddo and Bryan Counties. Moderate to heavy in heads and whorls of sorghum in southwest counties. (OK Coop. Sur.). ARKANSAS - Only occasional larva found on sorghum in Lonoke, Poinsett, and Faulkner Counties. (Boyer). FLORIDA - This species along with TOBACCO BUDWORM (*H. virescens*) and FALL ARMYWORM (*Spodoptera frugiperda*) needed treatment in 200 of 2,000 acres of peanuts in Alachua, Levy, and Marion Counties. (FL Coop. Sur.).

ALABAMA - Heliothis zea larvae 8 per 60 feet of row in Houston County soybean field. (Stephenson). NORTH CAROLINA - Larvae, first to third instar, on soybeans in counties south of Edgecombe County. Larvae expected in Halifax, Northampton, Hertford, and other northeastern counties August 13-17. No damage to date, pod injury likely August 16-19 in open canopy fields if present weather continues. Threshold (2 larvae per foot of row) reached in 30 percent of 15 open, blooming fields. (Hunt, Van Duyn). MARYLAND - Light, increasing statewide; eggs or larvae in 0-10 percent of silking corn ears on upper Eastern Shore. (U. Md., Ent. Dept.). NEW JERSEY - Trapped consistently statewide. Populations generally lighter than in 1975. However, Hurricane Belle probably brought some from southern areas. Sharp moth catch increase expected next few weeks. (Ins.-Dis. Newsltr.). NEW HAMPSHIRE - First adults of summer collected from blacklight traps at Salem, Hillsborough County, August 8 and Dover, Strafford County, August 1. (Turmel).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Scattered heavy infestations in preboot Washita County sorghum. (OK Coop. Sur.).

GREENBUG (Schizaphis graminum) - CALIFORNIA - Extensively damaged 80 acres of sudangrass north of Loki, San Joaquin County; field may be total loss. Grass dying and covered with sooty mold at ground level. Leaves and stems covered with thousands of aphids. No control attempted to date. (CA Coop. Rpt.). NEW MEXICO - Heavy in sorghum fields in Curry and Roosevelt Counties. (NM Coop. Rpt.). TEXAS - Decreased in most Rolling Plains grain sorghum fields. Heavy populations and economic damage in many panhandle areas, especially in Moore County. Populations in some fields in Ochiltree and Gray Counties reduced by parasitism. Average percent parasitism 10-20, up to 50-60, in south plains. Decreased in Crosby and Floyd Counties. Ranged 50-1,000 per leaf on bottom 4 true leaves in most untreated fields in Midland, Howard, Martin, and Glasscock Counties. Parasitized greenbugs in isolated Midland County fields. Light to moderate in isolated fields in El Paso and Hudspeth Counties. (Boring et al.).

OKLAHOMA - Up to 3,000 greenbugs per sorghum plant in some panhandle fields; some fields still treated, parasitism increasing. Scattered heavy infestations (up to 1,000 per leaf) in preboot Washita County sorghum. Ranged 0-450 per plant in Payne County. Very light in southwest counties due to heavy parasitism. (OK Coop. Sur.). ARKANSAS - Very light infestations found in 2 Poinsett County fields. Negative in Lonoke and Faulkner Counties. (Boyer). KANSAS - Infestations on sorghum, many nearing economic levels, generally decreasing in western and north-central areas due to parasitism by Lysiphlebus testaceipes (an aphidiid wasp). Up to 600 per plant on some sorghum. Also decreasing due to parasitism in northern Stafford County. Up to 1,100 greenbugs per plant on blooming sorghum in Smith County, about 50 percent of leaves dead. Ranged 100-1,000 per plant on sorghum in northwest and west-central areas. (Bell). NEBRASKA - Economic infestations common on sorghum in southwest district. Parasitism by Lysiphlebus testaceipes (a aphidiid wasp) still less than one percent August 7, reached 5 percent by August 10 in plots at North Platte, Lincoln County. Parasitism 100 percent in plots at Mead, Saunders County, by August 5. (Campbell et al.).

POTATO LEAFHOPPER (*Empoasca fabae*) - MISSOURI - Heavy in south-central and east-central areas, ranged 30-350 per 10 sweeps. (Munson). OHIO - At or slightly below economic threshold in third-growth alfalfa fields in west-central area. Averaged 90 per 100 sweeps, only minor leaf yellowing. (Lewis). WISCONSIN - Ranged 0-4 per 10 sweeps on lima beans in south-central area. Lighter on beans and potatoes in Central Sands. (WI Pest Sur.). PENNSYLVANIA - Moderate to heavy damage appearing in third and fourth-growth alfalfa. Yellowing trace to 10 percent in plants treated after harvesting and with moderate new growth. Up to 50 percent yellowing in untreated fields. Range of averages of leafhoppers per sweep (and of percent yellowing) by county: Butler 0.1-1.0 (0-10), Carbon 3.0, Centre 0.3-1.5, Clinton 0.95-1.5 (0-10), Lackawanna 1.0, Lancaster 0.5-8.3 (15-50), Logan 0.3-6 (0-50), Snyder 0.6-18.4 (0-50), Union 0.45-0.8, Washington 1.1-1.4 (trace to 15), Wayne 2 (trace), York 0.3-1.2 (10-20). (Shetlar et al.).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEVADA - Treatments applied to 200 acres of seed alfalfa at Daveytown, Humboldt County. Heaviest infestation averaged 20 per sweep in scattered seed alfalfa fields in Lovelock area, Pershing County. (Bechtel, Munk).

CORN, SORGHUM, SUGARCANE

DISEASES

COMMON MAIZE RUST (*Puccinia sorghi*) - KANSAS - Infection general statewide, appears most widespread corn disease. Percent infected plants by county: Shawnee 30-80, Brown 5, Riley trace, and Franklin 80. Infection varied in Cheyenne and Sherman Counties. Severe on sweet corn in Shawnee County home garden. (Sim).

COMMON SMUT (*Ustilago maydis*) - KANSAS - Trace in some Riley County corn fields, infected about 5 percent of plants in several Brown County fields. (Sim).

INSECTS

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - MONTANA - Larvae, up to one inch long, caused severe problems in stalks and ears of some sweet corn varieties at Billings, Yellowstone County. (Jensen). KANSAS - Larvae, 0.25 to 0.50 inch long, trace in early tassel corn in Pawnee County; 90 percent of ears infested with smaller larvae in corn field in sandhill area along Finney and Kearny County lines. (Bell). MISSOURI - Egg masses on central area corn, 0-32 per 100 plants. Averaged 6.9 and 6.3 per 100 plants in 2 areas. (MO Corn Pest Mgmt.). NEBRASKA - Infested 0-24 percent late corn plants in Antelope, Pierce, and Cedar Counties. Adult flights decreased in Dixon County. (Witkowski). Infested plants ranged up to 26 percent in corn in Hall, Buffalo, Adams, Merrick, and Nance Counties. (Witkowski, Raun).

WISCONSIN - Nearly all first-brood European corn borer larvae not yet pupated will overwinter as fifth-instar larvae. Current adults and pupae will make up second flight. Adult activity decreased. Sweet corn had to be treated. Egg masses on 4-16 per-

cent of plants in Rock and Green Lake Counties. Development ranged from fourth-instar larvae to empty pupal cases in Rock, Fond du Lac, Walworth, Green Lake, and Portage Counties. (WI Pest Sur.). PENNSYLVANIA - Many second-generation larvae pupated in south and central counties. Most remaining larvae in fourth to sixth instar. Heaviest counts of larvae (or pupae) in 20 corn stalks per field in these counties: Dauphin one (60), 2 (60); Lancaster 0, 0, (40), (18), (20), (3); Montgomery 12. (Shetlar).

DELAWARE - European corn borer adults averaged about 8 per night in blacklight trap collections in Sussex County. (Burbutis, Kelsey). NEW JERSEY - Decrease continued from Burlington County south. Catches peaking in north area. (Ins.-Dis. Newsltr.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - NEW MEXICO - First-generation adults laying eggs on corn in eastern counties. Development in Portales area, Roosevelt County, 7-10 days earlier than in Clovis area, Curry County. (NM Coop. Rpt.). OKLAHOMA - First-generation larvae damaged 80 percent of plants in one northern Texas County corn field. Larvae, pupae, and adults present. Light scattered infestations noted in Caddo County sorghum. (OK Coop. Sur.). KANSAS - Infested about 20 percent of early tassel plants in Pawnee County corn field. Larvae mostly feeding in tassels, no eggs seen. Larval infestation 25 percent in one field in sandhill area south of Garden City, Finney County. Larvae, 0.25-1 inch, feeding in whorls of very late corn, many bored in low on plants. Eggs, from fresh to red-bar stage, noted. Infestation heaviest in Finney County past several years. (Bell).

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Moderate in sorghum whorls in some fields in Hall, Stonewall, and Knox Counties. (Boring). OKLAHOMA - Infested nearly 100 percent of plants in some preboot sorghum fields in Washita County. Heavy in Rogers County forage sorghum field. Scattered areas in east-central counties and many fields in southwest counties still infested. (OK Coop. Sur.). MISSOURI - Small larvae light to moderate in late sorghum in south-central and east-central areas. Infested plants, 0-18 percent. (Munson). DELAWARE - Larvae injured corn in some areas. (Burbutis, Kelsey).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - KANSAS - Infestations generally light in corn fields in northwest and west-central areas. Larvae, mostly feeding behind ears, infested 40 percent of plants in one Wichita County field. Infestations ranged from none to 80 percent in Finney and Kearney Counties. Larvae, 0.75-inch to nearly full grown, feeding mostly in and about ears. (Bell). NEBRASKA - Economic, 60 percent of plants infested in one of 75 corn fields in York County, mostly still feeding on silks. Other fields in county ranged 0-10 percent. Most corn fields in western Antelope County infested; several fields needed treatment. Infested plants averaged 50 percent in 12 fields. Larvae up to 3 (averaged 1.5) per infested plant. Infested up to 80 percent of plants in corn fields in Rock and Brown Counties. (Raun et al.).

CORN ROOTWORMS (*Diabrotica* spp.) - COLORADO - Up to 8 WESTERN CORN ROOTWORM (*D. virgifera*) adults per corn plant in several fields in Weld County, some silks injured. (Hantsbarger). OKLAHOMA - Corn rootworm adults heavy in Cimarron County corn. (OK Coop. Sur.). MISSOURI - NORTHERN CORN ROOTWORM (*D. longicornis*) adults 0-5.1 (averaged 0.3 and 0.6) per plant in central area. *D. virgifera* adults in central area ranged 0-6.1 (averaged 1.2 and 1.0) per plant. (Munson). IOWA - *D. virgifera* larvae fed on roots of treated field corn in Crawford County August 4. Larvae 4-8 per plant; pupae and adults present. Larval damage in Carroll County. Adults laying eggs; heavy in Tama, Carroll, and Crawford Counties. (DeWitt). MINNESOTA - Corn rootworm adult survey in corn complete in southwest district, population about double that of 1975. Averaged 69,006 per acre for 8 counties. *D. virgifera* 59 percent, *D. longicornis* 41 percent. Heaviest in Pipestone County, 110,584 per acre. Severe drought probably reduced effectiveness of pre-emergence insecticides. Increased in west-central area, less in southwest district; numbered 35,874 per acre, about 7,300 more than in 1975. *D. longicornis* 50 percent of count; *D. virgifera* remainder. Averaged 47,823 per acre in 3 south-central district counties. (MN Pest Rpt.).

OHIO - *D. longicornis* light to moderate in west-central and north-central districts. Ranged 8-190 per 50 corn plants. Up to 35 per plant noted. *D. virgifera* 0-29 per 50 plants. Averages per 50 corn plants by area: McGuffey, Hardin County, 3.3 on August 8, 1976; Gilboa, Putnam County, 17 on August 10; Oak Harbor, Ottawa County, 3 on August 11; Castalia, Erie County, 1.7 on August 11. All collected and determined by D.R. Lewis. These are new county records. (Lewis, Szatmari-Goodman).

WISCONSIN - Corn rootworm populations in field corn decreased as silks dried. Heavy in some sweet corn plantings, particularly in gardens with no controls. Many adults moved into cucumbers, melons, alfalfa, and buckwheat. *D. virgifera* and *D. longicornis* heavy in Dodge County sweet corn; leaf feeding on 28 percent of plants. *D. virgifera* larvae caused lodging and goosenecking in Clark County corn field near Curtiss. Field in corn for 2 years. (WI Pest Sur.).

MARYLAND - *D. longicornis* adults moderate to heavy in corn statewide. Most feeding in postpollination silks. (U. Md., Ent. Dept.). PENNSYLVANIA - Adults approached full activity in southern and central counties and some adults appearing in northern and western counties. Adults per 20 corn plants by county: Adams 22, Dauphin 2, Lancaster 15-80 on 120 plants, Lycoming 5, Montour one. (Kim). NEW HAMPSHIRE - *D. longicornis* adults averaged 2 per silk on sweet corn at Bedford, Hillsborough County. (Turmel).

BANKS GRASS MITE (*Oligonychus pratensis*) - OKLAHOMA - Treatments applied to scattered corn fields in panhandle counties. (OK Coop. Sur.).

SMALL GRAINS

DISEASES

SMOOTH-SPORED BUNT (Tilletia foetida) - MICHIGAN - Very heavy week of August 6 in wheat fields planted from one seed source. (Smith, Howes).

OAT LOOSE SMUT (Ustilago avenae) - MICHIGAN - Widespread on oats in State week of August 6, usually very rare in State. (Smith).

BARLEY YELLOW DWARF VIRUS - MICHIGAN - Red leaf of oats common throughout Upper Peninsula and elsewhere since spring; panicles blasted. Yellow leaf symptoms in barley masked by maturity. (Smith).

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Some rice fields in various areas treated. (Boyer). MISSISSIPPI - Infested rice in delta counties. Larvae 6-8 per square foot in some areas. Larvae fed on soybeans, cotton, sorghum, corn, and all other types of grasses statewide. Damage heavy in south area. (Anderson).

RICE STINK BUG (Oebalus pugnax) - ARKANSAS - More than usual number of rice fields treated; more fields were grassy. (Boyer).

CHINCH BUG (Blissus leucopterus leucopterus) - MISSISSIPPI - Heavily infested millet in Amite County, 50 percent of crop damaged. (Mitchell).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Heavy counts damaged bermudagrass in Tulsa and Payne Counties. (OK Coop. Sur.). ARKANSAS - Treatments required in pastures, meadows, and lawns statewide. (Boyer). GEORGIA - Light to heavy, especially damaging to bermudagrass, across south area week ending August 7. Larvae fully grown, left Spalding County corn plants. (Suber, Morrill).

BLUEGRASS BILLBUG (Sphenophorus parvulus) - NEBRASKA - Larvae heavy (averaged 18 per square foot) in commercial Cass County sod field. (Kindler). NEW HAMPSHIRE - Lawn damage moderate to severe in Rockingham County, especially in seacoast area. (Bowman).

A SCARAB (Ataenius spretulus) - OHIO - Second summer generation of this turf pest underway in southwest area. Development 20 percent eggs, 16 percent larvae, 12 percent pupae, and 53 percent adults at one Hamilton County site. Heaviest at 52 specimens per square foot. Flights over golf course fairways noted in late evenings. (Niemczyk, Wegner).

FORAGE LEGUMES

INSECTS

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) - MASSACHUSETTS - Adults per sweep (and eggs per tiller) by county: Hampshire 8.4 (18.4) at Amherst; Franklin 23.7 (21.8) at Northfield, 21.7 (11.4) at Gill, 11.0 (6.6) at Deerfield, 23.0 (1.1) at Sunderland. (Andaloro).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Moderate in Tulsa County alfalfa. (OK Coop. Sur.).

SOYBEANS

DISEASES

SOYBEAN BROWN SPOT (Septoria glycines) - KANSAS - Severity increased in previously infected soybean fields. Percent of plants infected in fields surveyed by county: Franklin 80, Brown 80, and Riley 20-100. Some defoliation in each case. (Sim). TENNESSEE - Symptoms noted on every soybean plant examined in Perry and Madison County. (Kelly et al.).

FROGEYE LEAF SPOT (Cercospora sojae) - TENNESSEE - Heavy infections in soybeans in Perry County; none to very light in Madison County. (Gordon et al.).

BEAN YELLOW MOSAIC VIRUS - TENNESSEE - Symptoms on 20 percent of soybeans checked in Perry County and less than one percent in Madison County. (Sauve et al.).

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Migrating from defoliated alfalfa field into young soybean field in Muskogee County. Larvae averaged 10 per row foot in margin of field. (OK Coop. Sur.). TENNESSEE - Treatments applied to 2,000 acres of damaged soybeans in Obion County, some treatment in Lawrence and Monroe Counties. Treatments applied to damaged milo, corn, turf, and grain sorghum in Obion, Monroe, Lawrence, and Marshall Counties. (Gordon, Bruer).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Larvae damaged older than usual soybean stands in 50-acre Tallapoosa County field. Girdled stems 5-20 percent on 12 to 30-inch plants; plants dying and falling. (Henderson et al.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Adult and larval population and damage economic in 4 large soybean fields in Etowah and Cherokee Counties; controls applied. (Sanderson, Hall). VIRGINIA - Second generation full grown and laying eggs in Richmond, Essex, King and Queen, and Hanover Counties. Third-generation larval hatch expected soon, traditionally caused greatest amount of damage. (Allen).

BEAN LEAF BEETLE (Cerotoma trifurcata) - NORTH CAROLINA - Defoliation resulted in about 120 acres of soybeans treated in Tyrrell County. Treatment necessary in Hyde County. (Van Duyn).

TWOSPOTTED SPIDER MITE (*Tetranychus urticae*) - IOWA - Populations continue increase on soybeans in Boone and Story Counties, 200+ per leaflet noted. (DeWitt).

PEANUTS

INSECTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - OKLAHOMA - Heavy in one peanut field in Pittsburg County. Infested 40 percent of plants in dryer areas of one Beckham County field. (OK Coop. Sur.).

COTTON

INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Nearing damaging levels in south-central area cotton. Percent punctured squares 10-99 in north-central area, 40-65 in Navarro and Ellis Counties. Damage increased in most fields in Kaufman, Ellis, Navarro, Montague, and Clay Counties. Second-generation adults emerged in older fields in Rolling Plains. Percent square damage by county: Fisher, Jones, and Knox up to 90; Foard, Hardeman, Haskell, Stonewall, and Wilbarger 25-60. Square damage up to 24 percent in many fields throughout Rolling Plains. First and second generations in several fields in Tom Green and Runnels Counties. Damage 22 percent in several Howard County fields with heaviest 27 percent. Percent fields infested with eggs decreased from 60 to one in Howard County. Light activity in isolated Howard County fields. First-generation weevils caused 5-12 percent punctured squares. (Cole et al.).

OKLAHOMA - Percent boll weevil-punctured cotton squares by county: Caddo up to 90; Grady 80; Jackson, Harmon, Kiowa, Greer 65; McClain 60; Tillman and Beckham 50. Averaged 26 percent in Haskell County and 4 percent in Comanche County. Pheromone trap counts, 2 adults in 24 Tillman County traps. (OK Coop. Sur.). MISSISSIPPI - Average percent cotton infestation (in number of acres) by county: Quitman one (2,400), Monroe one (100), Montgomery 4 (700), Franklin 7 (85), Prentiss 7 (200), Lincoln 20 (500), Noxubee 6 (2,000). Increased in most areas of State. Controls successful to date. (Anderson).

ALABAMA - Boll weevil infestations less than 10 percent in fields where controls began at economic level and maintained on schedule in central and southern areas. Infestations 30-60 percent in other fields where first application delayed or started and terminated before second "hatchout." Increased to economic counts in smaller fields surrounded by good hibernation sites. More fields nearing economic levels daily as second-generation "hatchout" occurs and new weevils puncture squares. (Smith et al.). TENNESSEE - Percent punctured cotton squares by county: Crockett 5-25, Haywood 10-20, Fayette 0-20, McNairy 0-20, Franklin 0-10, and Lincoln 0-10. Square counts increased in all areas. Up from 2-3 percent punctured squares to 10-12 percent. First generation "hatchout" occurred and peak emergence should occur next 7-10 days. Damage observed in Lake County, unusual for time of year. (Pendergrass).

BOLLWORMS (*Heliothis* spp.) - TEXAS - *H. zea* in nearly every cotton field in south-central area. Percent square damage by county: Baylor, Fisher, Jones 5-10; Foard and Stonewall up to 20; Scurry up to 50 in some fields. Adults in Baylor, Jones, and Stonewall Counties. Larvae 30 per 100 plants in late fields in Kaufman, Navarro, Ellis, Collin, Hunt, Montague, and Clay Counties. Eggs increased in several High Plains fields. Damaged 10-50 percent of squares and bolls in Borden and Scurry Counties. Very few larvae and eggs in Crosby and Floyd Counties. Larval-infested fields increased from 31 to 80 percent in Martin County. Damage 27 percent in some fields; egg-infested fields decreased from 46 to 34 percent in Martin County. Larvae 4-6 percent in most El Paso Valley fields with 8-12 percent in some fields in Clint, Tornillo, and Acala. Activity light across Trans-Pecos area. Eggs and larvae 0-5 per 100 terminals, damaged squares 2-10 percent. (Cole et al.). OKLAHOMA - Damaged squares averaged 40 percent in Haskell County cotton, ranged up to 15 percent in treated McClain County fields. Larvae averaged 3 and eggs 8 per 100 terminals in Comanche County. Continuous egg laying light to moderate in Jackson, Harmon, Tillman, Greer, and Kiowa Counties. Larvae averaged 4,500 per acre in one Tillman County field. (OK Coop. Sur.).

ARKANSAS - *H. zea* and *H. virescens* variable in light trap collections statewide. *H. zea* still predominant species with very few *H. virescens* adults taken. (Boyer). MISSISSIPPI - Average percent *H. zea* infestation on cotton (in number of acres) by county: Quitman 5 (2,400), Monroe 3 (100), Montgomery 5 (700), Issaquena 3 (1,000), Prentiss 6 (200), Walthall 4 (200), Noxubee one (2,000). Percent eggs averaged (in number of acres) by county: Montgomery 6 (700), Noxubee one (2,000). Adult flights increased. (Anderson). ALABAMA - Heavy bollworm flight predicted for latter part of July much lighter and not as widespread as expected. Eggs 30-75 per 100 plant terminals in south, central, and northern areas. (Smith et al.).

CABBAGE LOOPER (*Trichoplusia ni*) - OKLAHOMA - Infestations heavy in previously treated cotton in McClain and Washita Counties. (OK Coop. Sur.). GEORGIA - Heavy on cotton in Dooly County week ending August 7. Viral disease spreading through population. (Sloan).

COLE CROPS

INSECTS

CABBAGE LOOPER (*Trichoplusia ni*) - WISCONSIN - High numbers of adults taken in a modified pheromone trap in Washington County. Adult taken in pheromone trap at Arlington, Columbia County. (WI Pest Sur.).

CABBAGE APHID (*Brevicoryne brassicae*) - WISCONSIN - Heavy in several areas on garden cabbage. Infestation heavy with damaging populations at Brodhead, Green County. (WI Pest Sur.).

DECIDUOUS FRUITS AND NUTS

INSECTS

CODLING MOTH (Laspeyresia pomonella) - MASSACHUSETTS - Trap catches in deciduous fruit orchards increased in Berkshire, Franklin, Hampden, and Hampshire Counties. (Wilder).

FALL WEBWORM (Hyphantria cunea) - NEW HAMPSHIRE - Increased throughout southeastern area. Heavy (5-10 webs per tree) on cherry, apple, and peach trees. (Burger).

BROADNECKED ROOT BORER (Prionus laticollis) - RHODE ISLAND - Infestations persistent on untreated Washington County fruit trees. (Wallace).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Adult emergence heavy in some areas of Carter and Love Counties. (OK Coop. Sur.).

SMALL FRUITS

INSECTS

BLUEBERRY MAGGOT (Rhagoletis mendax) - OHIO - Loss to commercial blueberry production heavy in Lorain County. Larvae infested up to 50 percent of ripened berries. (Williams). MASSACHUSETTS - Adults averaged 60 per trap in Plymouth County, up from 45 per trap last period. (Tomlinson).

ORNAMENTALS

DISEASES

VOLUTELLA BLIGHT (Volutella buxi) - DELAWARE - Widespread, seriously affecting pachysandra. Plants can only be removed and destroyed. (Carroll).

IMPOMOEAE WHITE RUST (Albugo impomoeae-panduratae) - TENNESSEE - Heavy infection observed on morningglory in Perry County. (Sauve, Gordon).

INSECTS

TEA SCALE (Fiorinia theae) - VIRGINIA - Heavy on Chinese holly in Appomattox County. (Allen).

FOREST AND SHADE TREES

DISEASES

SPRUCE TWIG BLIGHT (Valsa kunzei var. piceae) - RHODE ISLAND - Infections heavier than in past 3 years on landscape spruce trees in Washington County. (Wallace).

DUTCH ELM DISEASE (Ceratocystis ulmi) - MINNESOTA - Infected 124 of 164 municipalities at Minneapolis and St. Paul. Confirms projection for record elm loss. Midseason loss of 25,549 elm trees compared with total loss of 27,044 trees in 1975. (MN Pest Rpt.).

INSECTS

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - CALIFORNIA - Larvae and adults heavy on tips of pine trees at Bonita, San Diego County. Severely damaged ornamental pines. (CA Coop. Rpt.).

PINE NEEDLE SCALE (Chionaspis pinifoliae) - NEVADA - Heavily infested Abies lasiocarpa, (subalpine fir) and A. concolor (white fir) in Jarbidge area, Elko County. Trees dead or dying in several one-acre spots. (Peters).

BOXELDER LEAFROLLER (Gracillaria negundella) - NEVADA - Heavily infested and damaged boxelder at Elko, Elko County, week ending August 6. All leaves on some trees damaged. (Peters). Currently, scattered boxelder in Reno and Sparks areas, Washoe County, and Winnemucca, Humboldt County, heavily damaged. (Sakurada, Bechtel).

WALNUT CATERPILLAR (Datana integerrima) - MARYLAND - Moderate; defoliated trees in hardwood forest near Denton, Caroline County. (U. Md., Ent. Dept.).

FALL WEBWORM (Hyphantria cunea) - VIRGINIA - Larval and adult damage widespread and serious on isolated trees. Damage especially noticeable along Montgomery side of New River. (Allen).

MOURNINGCLOAK BUTTERFLY (Nymphalis antiopa) - OKLAHOMA - Larvae 1-50 per elm tree in Boise City area, Cimarron County. (OK Coop. Sur.).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEVADA - Heavily infested and damaged elms at Contact, Elko County. (Peters). TEXAS - Heavily damaged elms in Dickens, Foard, Wichita, and Wilbarger Counties. (Boring).

SYCAMORE LACE BUG (Corythuca ciliata) - MICHIGAN - Second-generation populations very heavy on sycamore in Ingham County August 4. (Kennedy).

MIMOSA WEBWORM (Homadaula anisocentra) - PENNSYLVANIA - Larvae collected on Gleditsia triacanthos (honeylocust) at Bath, Northampton County, by L. Semmel, August 6, 1976. Light infestation reported on 2 trees. Larvae collected on honeylocust at Allentown, Lehigh County, by L. Semmel, August 6, 1976. Infested 10 percent of 300 trees in nursery. All determined by T. Henry. These are new county records. (Kim).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - TEXAS - Decreased on livestock in Rolling Plains where dry. Heavy in parts of Knox County. Moderate in Robertson County. Moderate to heavy on cattle in Winkler, Presidio, Upton, and Pecos Counties. (Boring et al.). OKLAHOMA - Counts per head by county: Mayes ranged 150-600 on cattle, Beaver averaged 200 on cattle; Texas ranged 100-500 on bulls and 25-50 on horses. (OK Coop. Sur.). MISSOURI - Ranged 60-400 per animal on cattle in south-central and east-central areas. Averaged 210

per animal on 2 herds. (Munson). IOWA - Averaged 140 per head on untreated Angus cattle in Story County. (DeWitt). NORTH DAKOTA - Ranged 200-1,000 per animal on range cattle in Slope County. (Brandvik). FLORIDA - Averaged 188 per head in small untreated beef herd at Gainesville, Alachua County. Averaged 9 (maximum 65) per head on ponies at Ocala, Marion County. (FL Coop. Sur.). KENTUCKY - Ranged 25-280 (mean 114.5) on 10 untreated Lincoln County cows and 0-10 (mean 1.0) on 10 untreated calves. None on 10 treated bulls. Ranged 40-120 (mean 86) on 10 treated Casey County cows and 0-20 (mean 2.5) on 10 treated calves. (Christensen).

FACE FLY (Musca autumnalis) - MISSOURI - Ranged 4-51 per head on cattle in south-central and east-central areas. Averaged 21 and 24 per head on 2 herds. (Munson). IOWA - Ranged 6-26 (averaged 18) per head on untreated Angus cattle in Story County. (DeWitt). MISSISSIPPI - Decreased in northeast Mississippi. Moderate numbers still present in most areas. (Anderson). KENTUCKY - Ranged 20-65 (mean 34.6) on 10 untreated cows in Lincoln County and 8-40 (mean 24.7) on 10 untreated calves. Ranged 10-50 (mean 23.3) on 6 treated heifers, 6-18 (mean 36.7) on 10 treated cows in Casey County and 8-40 (mean 21.4) on 10 treated calves. (Christensen).

STABLE FLY (Stomoxys calcitrans) - FLORIDA - Averaged 4 per head in small untreated beef herd at Gainesville, Alachua County, and on ponies at Ocala, Marion County. (FL Coop. Sur.).

BLACK FLIES (Simulium spp.) - NEW HAMPSHIRE - Larvae still heavy throughout large and small stream systems at Pittsburg, Coos County. Smaller streams support S. tuberosum, S. aureum, and S. verecundum larvae. S. vittatum and S. decorum larvae heavy below dam of first Connecticut Lake in Connecticut River. Adult activity light at Pittsburg, adults averaged 1-2 per sweep in early morning and evening collections. In southern area, only occasional adult of S. jenningsi group present. (Burger).

MOSQUITOES - FLORIDA - Averaged 3-4 per 10 ponies at Ocala, Marion County. (FL Coop. Sur.). OHIO - Adults very heavy in northeast area, north of Harrison County. Total of 1,700 taken in light trap one night in Stark County. Predominant species Aedes trivittatus. Culex pipiens increasing statewide, heaviest in west-central low-rainfall area. (Berry et al.).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

AN APHIDIID WASP (Lysiphlebus testaceipes) - KANSAS - Parasitism of Schizaphis graminum (greenbug) 5-10 percent on sorghum in west-central and northwest districts, 20-100 percent in north-central, and 20-80 percent in Stafford County. Parasitism good in southwest area. (Bell).

FEDERAL AND STATE PROGRAMS

INSECTS

GRASSHOPPERS - ARKANSAS - Some rice fields in northeast area treated. (Boyer). NORTH DAKOTA - Melanoplus bivittatus 20 per

square yard on alfalfa in Slope and Stark Counties. M. sanguinipes 15 per square yard on alfalfa in Golden Valley County. Majority of populations in adult stage with small numbers of fourth and fifth instars. (Brandvik). MINNESOTA - Averages per square yard of alfalfa by county: Lincoln, Nobles, Murray 6; Lac qui Parle, Cottonwood 5; Nobles and Murray 9 (2 fields each); Lincoln (2 fields) 10. Up to 45 per square yard on Brown County roadside. Infestations next to corn field, grasshoppers migrating into field. Outermost 6-10 rows showing feeding damage. (MN Pest Rpt.).

GYPSY MOTH (Lymantria dispar) - CALIFORNIA - Single male adult collected from disparlure trap at Midpines, Mariposa County, in campground August 6. Trap deployment increased. (CA Coop. Rpt.). PENNSYLVANIA - Flight activity ceased throughout infested areas; trace activity at upper elevations. (Cameron).

JAPANESE BEETLE (Popillia japonica) - TENNESSEE - Controls applied to 80 acres of soybeans in Monroe County. (Law). Very large populations in Washington County damaged field crops, garden crops, flowers, and ornamentals. (Walker).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Male taken in trap in guava tree by R. Toshima. Collected August 2, 1976, at Rancho Park, Los Angeles County, in area within but near outer limits of Ceratitis capitata (Mediterranean fruit fly) trapping area. Tentatively identified by E. Chao; confirmed by M. Wasbauer. Trap saturation of area under way with male annihilation treatment to follow. (CA Coop. Rpt.).

SCREWWORM (Cochliomyia hominivorax) - Total of 897 cases reported from continental U.S. July 25-31 as follows: Texas 894, New Mexico 1, Arizona 2. Total of 309 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 449 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 148,820,100 as follows: Texas 121,721,100, New Mexico 7,371,000, Arizona 19,728,000. Total of 3,586,500 sterile flies released within Barrier of Mexico. (Vet. Serv.).

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - Larvae moderate, damaged grapevines at El Cajon, San Diego County. Area under biocontrol for this pest. (CA Coop. Rpt.).

WHITEFRINGED BEETLES (Graphognathus spp.) - ALABAMA - Adults 32 per 60 feet of row on soybeans in Houston County. (Stephenson).

HAWAII PEST REPORT

Detection - Single adult of BLACK VINE WEEVIL (Otiorhynchus sulcatus) picked up on Kaluapuhi Trail at Kokee State Park, Kauai, at 3,500-feet elevation by R. Rice, March 26, 1976. Second adult collected by R. Rice a month later on Kumuwela Trail at Kokee State Park at 3,800-feet elevation. Determined by D.R. Whitehead. This is a new State record. (Beardsley, Higa). Single adult of a VESPID WASP (Delta curvata) collected at large at Kaunakakai, Molokai, by A. Oshiro, August 1, 1976. Determined by J. Beardsley. This is a new island record. Also reported from Oahu where first detected in December 1974. (Beardsley). Adults of a EULOPHID WASP (Aneristus sp.) were reared out of Saissetia coffeae (hemispherical scale) on Cycas sp. (cycad) collected at Lihue, Kauai, by D. Sugawa, July 29, 1976. Determined by S. Higa. This is a new island record of this undescribed species first collected on Oahu May 1976. (L. Nakahara).

General Vegetables - Infestations and damage of LEAFMINER FLIES (Liriomyza spp.) heavy on one acre of melon at Kahuku and backyard pole beans at Waiahole, Oahu. (L. Nakahara).

Ornamentals - Heavy infestations of GREENHOUSE THRIPS (Heliothrips haemorrhoidalis) on several ornamental Podocarpus sp. shrubs at Salt Lake, Oahu. Foliage damage moderate. (Kajiwarra).

NATIONAL WEATHER SERVICE 30-DAY OUTLOOK

MID-AUGUST TO MID-SEPTEMBER

The National Weather Service's 30-day outlook for mid-August to mid-September is for temperatures to average below seasonal normals in the northern Plateau Region and also over the southern half of the Nation, except for near to above normal along the California coasts. Above normal averages are indicated along the northern border from the northern Mississippi Valley to northern New England. In unspecified areas near normal temperatures are in prospect. Rainfall is expected to exceed the median amount along the middle and north Atlantic coast as well as over the South, and west of the Continental Divide except for the central Pacific coast. Elsewhere, less than the median value is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

DETECTION

NEW STATE RECORD

INSECTS

BLACK VINE WEEVIL (Otiorynchus sulcatus) - HAWAII - Kauai Island. (p. 538).

NEW COUNTY AND ISLAND RECORDS

INSECTS

A EULOPHID WASP (Aneristus sp.) - HAWAII - Kauai. (p. 538).

MIMOSA WEBWORM (Homadaula anisocentra) - PENNSYLVANIA - Northampton, Lehigh (p. 535).

A VESPID WASP (Delta curvata) - HAWAII - Molokai (p. 538).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - OHIO - Hardin, Putnam, Ottawa, Erie (p. 529).

CORRECTIONS

CPPR 1(27):392 - AMERICAN DOG TICK (Dermacentor variabilis) - IDAHO - Species should be ROCKY MOUNTAIN WOOD TICK (Dermacentor andersoni) at Twin Falls, Twin Falls County, and AMERICAN DOG TICK (Dermacentor variabilis) at Grofino, Clearwater County. Delete last sentence in note. (Keirans).

CPPR 1(30):464 - LOPHODERMIIUM NEDDLECAST ... should read ... LOPHODERMIIUM NEEDLECAST ...

CPPR 1(32):515 - GYPSY MOTH (Lymantria dispar) - PENNSYLVANIA - Note should read "Aerial surveys in Carbon, Susquehanna, and Wyoming plus the counties below. Degree of defoliation by July 20 in Lackawanna, Luzerne, Monroe, Pike, and Wayne Counties: Heavy on 47,000 acres ... " (Miller).

LIGHT TRAP COLLECTIONS

LIGHT TRAP COLLECTIONS		Temperature (° F.)	Height (inches)	Species	Number	Notes	Other	Remarks
CALIFORNIA	Clements 8/2	62-85		BL	1			
	Stockton 8/1	62-86		BL	4			
FLORIDA	Gainesville 8/6-12			2BL				
	INDIANA (Counties)							
KANSAS	Randolph 7/30-8/5			BL	10	48		
	Vanderburgh 7/30-8/5			BL	69	50		
MINNESOTA	Rossville 8/12			BL				
	Tribune 8/5			BL				
MISSISSIPPI	Fergus Falls 8/6-12	52-90		BL				
	Worthington 8/6-12	62-90	0.65	BL				
NEBRASKA	Stoneville 8/6-12	58-93	0.01	2BL	4	10		
	Clay Center 8/3-4, 6-9			BL				
NEW JERSEY	North Platte 8/4-10			BL				
	Harrisonville 8/4-10			7BL				
OHIO	Vineyard 8/4-10			5BL				
	Wooster 8/7-13			3BL				
PENNSYLVANIA (Districts)	Central 8/1-11			BL	5	5		
	South East 8/1-11			BL		2		

LIGHT TRAP COLLECTIONS

[illegible]

Exotic Pests in International Commerce

Plant Importation and Technical Support Staff

The following is a list of exotic plant pests which quarantine authorities have recently prevented from entering the United States.

	<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Brachlybas variegatus</u> (Le Guillon) a coreid bug	adult	with 150 boxes of ginger root	Hawaii	Fiji	HI
<u>Cryptorhynchus olivieri</u> Faust a curculionid beetle	adult	with 4 mangoes from baggage	Chicago	Thailand	USA
<u>Frankliniella</u> sp. a thrips	adult	with 27 cartons of cut flowers	New Orleans	Guatemala	LA
<u>Larinus cynarae</u> (Fabricius) a curculionid beetle	adult	with military cargo	Dover	Turkey	SC
<u>Sipalinus hypocrita</u> (Boheman) a curculionid beetle	adult	in wood bracing with machinery	New York	Japan	PA
<u>Trogoderma granarium</u> Everts khapra beetle	larval	with 470 bags of gum	New York	India	NY
<u>Xystocera</u> sp. a cerambycid beetle	larval	under bark of logs	Norfolk	Ivory Coast	VA
<u>Helicella virgata</u> DaCosta a snail	juvenile	with 595 cartons of dried flowers	New Orleans	Spain	LA

WEATHER OF THE WEEK ENDING AUGUST 15

Reprinted from Weekly Weather and Crop Bulletin Supplied by the National Weather Service, NOAA.

HIGHLIGHTS: Hurricane Belle caused a flurry of activity as she unleashed high winds and heavy rains over the northern Atlantic Coast States. However, Belle quickly expended her force inland over Long Island and was downgraded to tropical storm status. Other severe weather include thunderstorms which produced high winds, heavy rains, hail, and a few tornadoes. Temperatures slipped to lows of 33 degrees in Flagstaff, Arizona, and 49 degrees in Denver, Colorado, on Saturday and even lower readings as an early frost covered sections of Minnesota, Wisconsin, and Michigan.

TEMPERATURE AND PRECIPITATION: Hurricane Belle traveled north along the Atlantic coast and expended much of her force over portions of New York and New England on Monday. Winds gusted to almost 80 m.p.h. at Bridgeport, Connecticut, and knocked out all power in that area. Winds peaked at about 60 m.p.h. at New York City's La Guardia Airport. Other high winds, around 80 m.p.h. scourged Cape Henlopen, Delaware, as Belle moved on her way. Winds also uprooted trees and downed power lines in extreme southern New Jersey. Torrential rains drenched portions of southeastern New York and the southern and eastern parts of New England. Brunswick, Maine, received more than 5 inches of rain, while New York's Central Park reported almost 4 inches. Coastal sections of Maryland and Delaware also listed more than 3 inches. Severe thunderstorms tormented the central and northern Plains States, the upper Mississippi Valley, western Iowa, and eastern New Mexico with high winds, rain, and hail. Isolated thundershowers dotted southern Florida and parts of Montana.

On the other hand, clear weather reached from lower Michigan, into the central and western Gulf Coast States, and over most of California. Contrasting weather converged on the Nation Tuesday. Mercuries dropped to record lows in the South, while high temperature with high humidity shrouded northwest Missouri, central and western Iowa, and western Nebraska. Although it remained dry in central California and most of South Dakota, flooding extended over portions of New York and New England. As Belle moved inland, the wind velocity lost some of its violence and caused the downgrade of Belle to tropical storm status. Even at that status, Belle managed to reek havoc over parts of southern Vermont, Massachusetts, and other portions of the Northeast with heavy rains and strong winds. Sunny skies lingered over most of the Plains, the Rockies, and the Desert Southwest. Temperatures stopped in the 90 degree range in the Desert Southwest and soared to the 100's in central Kansas. A line of severe thunderstorms plagued northwestern Missouri and eastern Kansas with heavy rains, hail, and damaging winds on Wednesday. St. Joseph, Missouri, and Emporia, Kansas, clocked winds at more than 50 m.p.h. as golf ball-sized hail pummeled Tarkio, Missouri. The line of thunderstorms stretched across Oklahoma to Iowa, Minnesota, and Wisconsin.

Another hot day prevailed over the southern and central Plains as temperatures skyrocketed to 104 degrees at Concordia and 103 degrees at Russell in Kansas; 105 degrees at Wichita Falls, Texas; and 103 degrees at Hobart, Oklahoma. New England and the Pacific

Northwest reported mercuries in the 80 degree range. Elsewhere, readings reached seasonable marks. Partly cloudy skies and light winds helped temperatures drop over portions of the Rockies Thursday morning. Colorado posted record lows of 37 degrees at Alamosa and 50 degrees at Denver. Cool weather ended over the southeastern States, as cloudy skies and thunderstorms hung over the Gulf of Mexico Coast. Showers developed over the northern Rockies into the Intermountain region by early afternoon. The showers and thunderstorms centered over the middle Mississippi Valley and the northern Ohio Valley decreased and became widely scattered from the lower Great Lakes Basin through the lower Missouri Valley. Skies remained sunny over most of the Rockies and the southwestern quarter of the Nation, and temperatures scurried by the 100 degree mark in the Desert Southwest.

Thunderstorms pushed across most States east of the Rockies on Friday, the thirteenth. Several of the storm-hit areas reported strong winds in the 60 m.p.h. range, golf ball-sized hail, some tornado activity, and funnel cloud sightings. Precipitation also fell over the Pacific Northwest as a cold front approached the coastline, and showers activated in the northern Great Lakes area. Some of the more significant rainfall amounts included more than 2 inches in Cleo, Texas, and almost 1.5 inches in Detroit, Michigan. Cloudiness varied across the remainder of the Nation as thunderstorms moved across the countryside. Low early weekend temperatures cooled portions of the Southwest as Flagstaff, Arizona, recorded 33 degrees and Denver, Colorado, just 49 degrees on Saturday morning. Other weather activity continued with showers, thundershowers, and thunderstorms in much of the Nation on Saturday and Sunday. An early frost covered northern sections of Minnesota, Wisconsin, and Michigan in the low-lying areas, and temperatures dropped below freezing in some areas.

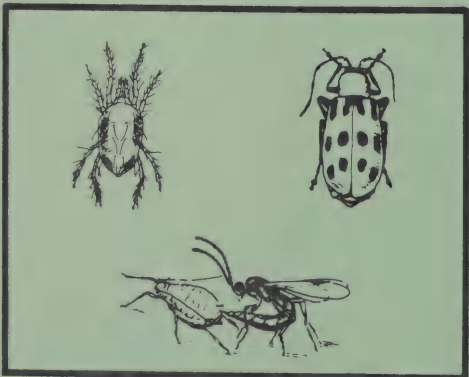
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Cooperative PLANT PEST REPORT

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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
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Hyattsville, Maryland 20782

COOPERATIVE PLANT PEST REPORT**HIGHLIGHTS**Current Conditions

ARMYWORM infested sorghum, sudangrass, and corn in New Mexico. Heavy on sorghum in El Paso Valley, and Glasscock, Pecos, and Reeves Counties in Texas. Economic in pastures in Gaines and Hale Counties. (p. 547).

BEEF LEAFHOPPER heavier than normal on roadside weed hosts in Monterey County, California. (p. 547).

CORN EARWORM moderate to heavy on sorghum in Texas. Economic damage to soybeans in Arkansas earlier than usual. (p. 547).

POTATO LEAFHOPPER damage in Coastal Plain of North Carolina more severe on peanuts than in past 10 years. (p. 548).

FALL ARMYWORM damage moderate to heavy on sorghum in Texas and Oklahoma. Sorghum totally defoliated in parts of one field in Kansas. (p. 550). Very heavy in lawns and pastures in Oklahoma and in Newberry County, South Carolina. Alfalfa infestations widespread and heavy in Oklahoma (p. 551). Heavy on soybeans in Le Flore County, Oklahoma. (p. 553). Rare cotton infestation in Arkansas. (p. 555).

Controls for WESTERN CORN ROOTWORM needed in some corn fields in Weber County, Utah. (p. 550).

ALFALFA CATERPILLAR heavier than normal on alfalfa near Fayetteville, Arkansas. (p. 552).

BACTERIAL PUSTULE heavy on soybeans in Woodson County, Kansas. (p. 552).

BOLL WEEVIL infestations economic on cotton in northern Alabama. (p. 554).

BEAN RUST heavy on navy beans in Michigan. (p. 556).

Marked increase of OAK WILT on black and red oak in five counties in Wisconsin. (p. 558).

Samples of DUTCH ELM DISEASE positive in Napa County, California. (p. 559).

Detection

A SCOLYTID BEETLE is new for Louisiana. (p. 558).

For new county and island records, see page 561.

Reports in this issue are for the week ending August 20, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ARMYWORM (*Pseudaletia unipuncta*) - NEW MEXICO - Infestation reported week ending August 13 on sorghum, sudangrass, and possibly corn in fields in Dona Ana and Luna Counties spread to previously uninfested fields in these areas. (NM Coop. Rpt.). TEXAS - Present in many sorghum fields in High Plains. Spotty in Hale County. Infestations heavy in some fields in El Paso Valley. Moderate to heavy in Glasscock, Pecos, and Reeves County. Decreased on corn, averaged 2 per plant in some Hale County fields. Infestations economic in some fields in High Plains. Economic in improved pastures in Gaines and Hale Counties. (Morrison et al.). MISSOURI - Very light in most late soybean fields in southwest area, larvae less than 0.5 per foot of row. (Munson). NEBRASKA - Most feeding damage to corn apparently over. Pupation increasing, some third-generation adults in light traps. (Roselle et al.). WISCONSIN - Larvae, 0.75 to 2.5 inches long, 12-15 per square foot in reed canarygrass near Poy Sippi, Waushara County. (WI Pest Sur.). NORTH CAROLINA - Damage to late corn heavy in Pitt, Onslow, Halifax, and Edgecombe Counties. Infestations spotty, range 0.25-1 acre in size. Most fields in dough stage. (Riddick et al.). DELAWARE - Considerable feeding injury in late planted corn in some Sussex County areas. (Burbutis, Kelsey).

BEEF LEAFHOPPER (*Circulifer tenellus*) - CALIFORNIA - Survey in southern Salinas Valley, Monterey County, found little curly top infection. Populations heavier than normal in roadside weed hosts; heaviest 4 per sweep near Greenfield, Monterey County. Russian thistle growth along National Interstate Highway 5 and State Highway 99 from Wheeler Ridge north to Bakersfield, Kern County, always presented haven for infestations. Thistle usually cut, however leafhoppers still breed on stubby plants. Infestations very heavy on Russian thistle in some areas. (CA Coop. Rpt.).

CORN EARWORM (*Heliothis zea*) - TEXAS - Moderate to heavy on sorghum in McCulloch, Nolan, Tom Green, Concho, and Mason Counties. Light in Glasscock, Pecos, and Reeves Counties. (Wilson, Neeb). OKLAHOMA - Scattered soybean fields treated in Wagoner County. Average 2 per 30 row feet in Haskell County. Ranged 5-30 per 10 sweeps in alfalfa in Garvin, Grady, and Caddo Counties. Averaged less than one per row foot in peanuts in Marshall County, adults numerous in some fields. (OK Coop. Sur.). ARKANSAS - About 400 acres of soybeans treated in Little River County week of August 13. Earlier than usual for economic infestations on soybeans. Currently, some sorghum fields treated in various areas of State. (Boyer). KANSAS - Eggs averaged 20-30 per plant on late corn (early tassel) in Pratt County. Adults common in blooming alfalfa in Labette County. (Bell). ALABAMA - Light in soybean fields statewide. Heaviest 6 per 60 feet of row in Houston County and 3 per 60 feet in Geneva County; occasional larvae in Dallas County. (Stephenson et al.).

SOUTH CAROLINA - Second to sixth-instar larvae of corn earworm heavy (7-21 per foot of row), damaged 10 peanut fields in Sumter County week of August 13. Light to moderate (26 per foot of row)

on soybeans in Sumter and Barnwell Counties. Controls recommended. (French). NORTH CAROLINA - Heliothis zea larvae defoliated peanuts in Halifax County area. Damaged about 25 percent of 15 fields observed. Third to fifth-instar larvae very heavy in open-canopied soybean fields in Johnston, Wilson, Wayne, Duplin, Harnett, Sampson, Bladen, Washington, and Beaufort Counties. Populations 6 per foot (threshold 2 per foot) and foliar damage noted. Of 20 fields, 15 at or above threshold. Some closed-canopied fields nearing threshold. Populations in light traps decreased from 500+ per night to less than 200 in most northern Coastal Plain traps. Decreased from 80 per night to less than 50 in central and southern Coastal Plain traps. Indicate heavy egg laying in cotton and soybeans over. (Hunt, Van Duyn).

KENTUCKY - Larvae of corn earworm infested 45 percent of ears from 100 feet of row of sweet corn in Fayette County. (Gregory). INDIANA - Nearly full-grown larvae occasionally observed in ears of corn grown for grain in Sullivan County. (Meyer). MARYLAND - Flights significantly increased statewide with blacklight trap catches averaging 30 per night. Soybeans, snapbeans, and lima beans expected to be heavily infested by second brood as primary egg laying targets due to early corn maturity. (U. Md., Ent. Dept.). NEW JERSEY - Adults increased on sweet corn in most areas of State. (Ins.-Dis. Newsltr.).

CORN LEAF APHID (Rhopalosiphum maidis) - MAINE - Populations on corn and possible damage much less than past 3 years. Heavy rainfalls apparently helped reduce populations. (Gall).

GREENBUG (Schizaphis graminum) - OKLAHOMA - Heavy in some isolated sorghum fields in Tillman County. (OK Coop. Sur.). INDIANA - Small colonies (up to 50 specimens with occasional alate) observed for first time in season on grain sorghum. About one colony per yard of row noted. Seed heads in field exposed, no spread to date. More mature fields in vicinity not infested. Predator populations, including green lacewings, Hippodamia convergens, and Coleomegilla maculata (lady beetles) sufficient for good control. (Meyer).

POTATO LEAFHOPPER (Empoasca fabae) - MISSOURI - Light, 8-23 per 10 sweeps, in late-planted soybeans in southwest and west-central areas. (Munson). NORTH CAROLINA - Damage moderate to heavy in northern Coastal Plain peanut fields. Foliar damage to 90 percent of plants, some "hopperburn" in Scotland Neck area. Damage usually restricted to light soils of northern Coastal Plain. Damage most severe in past 10 years with severe damage on heavy as well as light soils. (Robertson, Hunt). KENTUCKY - Adults averaged 373 and nymphs 160 per 100 sweeps of forage in Fayette County. (Parr). NEW JERSEY - Adults and nymphs averaged 72 per 25 sweeps of alfalfa in 5 locations. (Ins.-Dis. Newsltr.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - CALIFORNIA - Gravid alates up to 10 per 25 sweeps in commercial alfalfa plantings. (CA Coop. Rpt.). OKLAHOMA - Light (100 or less per 10 sweeps) in alfalfa in Garvin, Grady, Caddo, and Major Counties. (OK Coop. Sur.). KANSAS - Light, 5-25 per sweep in alfalfa in several southeast district counties. (Bell). WISCONSIN - Up to 10 per sweep in east-central area alfalfa. Lighter in central, south-central, west-central, and southwest areas. (WI Pest Sur.).

CORN, SORGHUM, SUGARCANE

DISEASES

HOLCUS SPOT (*Pseudomonas syringae*) - KANSAS - Trace in one field of forage sorghum in Dickinson County. First report of season. (Sim).

SORGHUM LEAF RUST (*Puccinia purpurea*) - KANSAS - Trace in one grain sorghum field and one forage sorghum field in Dickinson County. First report of season. (Sim).

COMMON MAIZE RUST (*Puccinia sorghi*) - KANSAS - Continued most widespread corn disease in State. Percent infected field corn plants by county: Dickinson 2, Marion 50, Saline 25. Also evident on popcorn in Douglas County, 20-75 percent infection in fields surveyed. (Sim).

INSECTS

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - KANSAS - Larvae infested 100 percent of early-tassel corn in Pratt County. (Bell). MISSOURI - Second and third-instar larvae 2.1 per plant in 16 percent of plants in one southwest area corn field. Larvae 0.8 per plant in 22 percent of plants in second field. Egg masses 0-16 per 100 plants in central area. Averaged 3 and 4.2 per 100 plants in 2 areas. (MO Corn Pest Mgmt.). IOWA - Moth flight peaked in Hancock County August 13. Some adults still in flight statewide. (DeWitt). MINNESOTA - Second-generation moth activity quite varied based on field surveys and light trap catches. Egg masses per 100 plants of field corn averaged one in southeast and 2 in south-central districts. Egg masses per 100 sweet corn plants by area: Glencoe 18, Montgomery 12, Le Sueur 10, Blue Earth 3. Corn stalk dissection in southeast district showed 33 percent first generation fifth instar larvae, 22 percent pupae, and 45 percent moth emergence. Commercial treating continued. (MN Pest Rpt.).

ILLINOIS - European corn borer adult flights heavy in corn and alfalfa fields near Rock Falls area, Whiteside County. (IL Pest Sur.). WISCONSIN - Egg masses or new larvae in sweet corn fields no more than 4 percent in Columbia, Dane, Trempealeau, Iowa, Fond du Lac, Brown, and Outagamie Counties. Infested plants 10+ percent in Iowa County, intensive control treatments applied. (WI Pest Sur.). PENNSYLVANIA - Second-generation adults active statewide, most other larvae pupating. (Jackowski et al.).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - TEXAS - Egg masses on up to 50 percent of corn plants in Hale County with second-generation egg laying decreasing. First generation heavily infested fields in Hale County, up to 16 percent of stalks lodged by August 11. No eggs found on east Plains in Crosby County. (Latham, Morrison).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - NEBRASKA - Larvae in most corn fields in Dundy, Chase, Perkins, Red Willow, Frontier, Dawson, Custer, Valley, Garfield, Rock, Brown, Loup, and Keith Counties. Infestations heavy in some areas. Most larvae entered ears. Of 48 corn fields checked in Brown, Rock, Keya Paha, and Holt Counties, 0-58 (average 9.75) percent of plants infested. (Bush).

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Moderate to heavy on sorghum in Glasscock, Pecos, and Reeves Counties. (Neeb). OKLAHOMA - Moderate to heavy on preboot sorghum in most areas. Ranged 10-50 per row foot in one grain sorghum field in Washita County. (OK Coop. Sur.). KANSAS - Whorl infestations 90-100 percent in late sorghum in Montgomery and Woodson Counties, up to 50 percent in Bourbon County. Larvae averaged 8 per plant in one field of 10-inch sorghum in Montgomery County. Total defoliation in parts of field. (Bell). MISSOURI - Light to moderate in some early-planted fields of sorghum with compact heads. Mainly second-instar larvae 6-31 per 100 heads in southwest area. (Munson). SOUTH CAROLINA - Heavily damaged grain sorghum field in Laurens County week of August 13. Damaging in Newberry and Clarendon Counties. Controls recommended. (Outz).

VIRGINIA - Fall armyworm infested 40+ percent of corn plants in 10 acre field in Fauquier County, damage significant. About 30 percent of plants damaged in Augusta County field. Larvae about 0.75-inch long, indicates damage will be much more severe unless immediately controlled. (Allen). MARYLAND - Eggs and larva noted in sweet corn fields on lower Eastern Shore. (U. Md., Ent. Dept.).

CORN ROOTWORMS (Diabrotica spp.) - UTAH - WESTERN CORN ROOTWORM (D. virgifera) adults very heavy in some Weber County corn fields, control required. (Sjoblom). COLORADO - Adults 3-5 on sweet corn in Larimer County, egg laying heavy. (Fronk). ILLINOIS - D. virgifera (western corn rootworm) collected from 3 corn fields near Wheeler, Jasper County, July 27, 1976, and near junction of State Highways 37 and 161 in Marion County July 28. Both collections by K.D. Black. Determined by J. Bouseman. These are new county records. (IL Pest Sur.). INDIANA - D. virgifera (western corn rootworm) taken in corn for grain at: Jackson Township, Hancock County, August 10, 1976, and Eel River Township, Hendricks County, August 15 by J.M. Thieme; Honey Creek Township, Vigo County, Curry Township, Sullivan County, and Smith Township, Greene County, August 16; Harrison Township, Clay County, Taylor Township, Owen County, and Ray Township, Morgan County, August 17; Franklin Township, Johnson County, Hendricks Township, Shelby County, Center Township, Rush County, and Spiceland Township, Henry County, August 18. Collected by R.W. Meyer. All determined by T. Turpin. These are new county records. (Meyer).

OHIO - NORTHERN CORN ROOTWORM (D. longicornis) moderate to heavy (averaged 39-169 per 50 plants) in all fields of continuous corn surveyed in north-central counties. Also taken in alfalfa fields, indicate adult dispersal underway. D. virgifera (western corn rootworm) very light in very few of fields surveyed. Taken on corn at New Riegel, Seneca County, August 17, 1976; Upper Sandusky, Wyandot County, August 17; Flymouth, Richland County, August 18. Collected and determined by D.R. Lewis. These are new county records. (Lewis).

WISCONSIN - Corn rootworm adults continued to concentrate on corn with fresh silks, especially sweet corn; 5-8 per plant common. D. virgifera leaf feeding light in most sweet corn fields. D. longicornis more commonly found feeding on silks, many migrated into other crops, such as alfalfa, buckwheat, and vine crops; not as apparent in corn as 3-4 weeks ago. Lodging severe in Grant County fields with root damage. Poor seed set due to silk clipping

by corn rootworms noted in some Iowa County fields. Annual survey conducted first week of August showed substantial increase over 1975. (WI Pest Sur.).

MICHIGAN - Corn rootworms noted in Mason County week of August 6. Adults emerged in Ingham and St. Clair Counties. (Dudek et al.). D. longicornis most common in Sanilac County corn fields. Some D. virgifera present, one SOUTHERN CORN ROOTWORM (D. undecimpunctata howardi) seen in corn by week of August 13. Threatening populations (130 adults or more per 160 plants) in only one of 30 fields surveyed. (Polius). PENNSYLVANIA - Adults reached full activity on corn statewide. (Garra et al.).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Some treating in late sorghum in Ellis and Navarro Counties. Moderate to heavy in most "suckered" heads in Tom Green and Runnels Counties. None noted in blooming fields in Crosby County. (Moore et al.).

POTATO APHID (Macrosiphum euphorbiae) - WISCONSIN - Heavy on undersides of leaves of some sweet corn plants in Columbia County. (WI Pest Sur.).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Moderate to very heavy in lawns and pastures, especially bermudagrass, in many areas of State. Heavy in millet in Noble County. Widespread heavy infestations in grasses occurred earlier than in many years. (OK Coop. Sur.). MISSISSIPPI - Continued problem statewide on all types of grasses. Infestations averaged 70 percent in 700 acres of pasture in Itawamba County, 100 percent in 10 acres of pasture in Walthall County, and 70 percent in several lawns in Oktibbeha County. Infested peanuts in Tunica County. (Anderson). SOUTH CAROLINA - Moderate infestations caused heavy damage to several pastures in Newberry County week of August 13. Reported in Clarendon and Laurens Counties. Controls recommended. (Eason). TENNESSEE - This species and YELLOWSTRIPED ARMYWORM (S. ornithogalli) damaged pastures, hay, and turf crops in many west areas. Heaviest seem in areas of flooding or standing water. Total of 1,500+ acres damaged in Tipton County. (Locke).

FORAGE LEGUMES

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Widespread heavy infestations in many alfalfa fields in many areas of State. Ranged 5-40 per square foot in Logan, Canadian, and Oklahoma Counties and 280-385 per 10 sweeps in Garvin, Grady, and Caddo Counties. Defoliation nearing 100 percent in untreated fields in some areas. (OK Coop. Sur.). KANSAS - Defoliated field of alfalfa in Wilson County. Small larvae averaged 100+ per square foot in field of 14-inch alfalfa near Iola, Allen County. Infestations 10-20 per sweep in 9 to 12-inch alfalfa near Longton, Elk County. Larvae trace to 4 per square foot in some fields in Woodson, Allen, and Wilson Counties. (Bell).

BEET ARMYWORM (Spodoptera exigua) - NEW MEXICO - Migrating from weeds to alfalfa in Hatch area, Dona Ana County. (NM Coop. Rpt.). OKLAHOMA - Ranged 10-15 per 10 sweeps in alfalfa in Grady and Caddo Counties. (OK Coop. Sur.).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - UTAH - Heavily infested some fields of alfalfa in Garland area, Box Elder County. (Francom).

ALFALFA CATERPILLAR (Colias eurytheme) - ARKANSAS - Heavier than normal on alfalfa on university farm near Fayetteville, Washington County. Rare to find more than occasional specimen on alfalfa. (Boyer).

A FLEAHOPPER (Spanogonicus albofasciatus) - NEVADA - Taken on alfalfa in Fish Lake Valley, Esmeralda County, August 8, 1976. Collected by R.C. Bechtel and J.B. Knight. Determined by R.C. Bechtel. This is a new county record. (Bechtel).

PEA APHID (Acyrtosiphon pisum) - UTAH - Problem in forage alfalfa fields; in many counties much more severe than in spring (Knowlton). Crops damaged and sticky, caused harvest problems in some Millard County areas. SPOTTED ALFALFA APHID (Therioaphis maculata) also noted. (Chapman). NEVADA - Averaged 55 per sweep on hay alfalfa at Pleasant Valley, Washoe County. (Knight). WISCONSIN - Heavy on alfalfa in east-central and central areas, 80-150 per sweep. Lighter, 0-5 per sweep, in alfalfa in west-central, southwest, and south-central areas. Little parasitism noted. (WI Pest Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Ranged 2-10 per 10 sweeps in alfalfa in Garvin, Grady, Caddo, and Major Counties. (OK Coop. Sur.).

ALFALFA PLANT BUG (Adelphocoris lineolatus) - WISCONSIN - Adults and nymphs readily found on alfalfa and other crops. Ranged 3-6 per sweep in alfalfa in east-central area. Lighter in other areas. (WI Pest Sur.).

SOYBEANS

DISEASES

BACTERIAL PUSTULE (Xanthomonas phaseoli var. sojense) - KANSAS - Heavy on Woodson County soybeans. Moderate in Wilson, Dickinson, Montgomery, Marion, Bourbon, and Wabaunsee Counties. (Sim).

SOYBEAN BACTERIAL BLIGHT (Pseudomonas glycinea) - KANSAS - Light on soybeans in Osage County. Moderate in Neosho, Linn, Bourbon, and Anderson Counties. (Sim).

SOYBEAN ROOT AND STEM ROT (Phytophthora megasperma var. sojae) - KANSAS - More evident in southeast area soybeans. Infections less than one percent in fields in Osage, Franklin, Coffey, Woodson, Allen, and Neosho Counties. Infection 5 percent in one Linn County field. (Sim).

SOYBEAN DOWNY MILDEW (Peronospora manshurica) - KANSAS - Heavy in soybean fields in Osage and Franklin Counties. Infections 80-100 percent. Lighter in Morris, Neosho, Coffey, Wilson, and Allen Counties. (Sim).

SOYBEAN STEM CANKER (Diaporthe phaseolorum var. caulivora) - KANSAS - Less than one percent in soybean fields in Osage, Wilson, Coffey, Neosho, Allen, and Linn Counties. This disease and CHARCOAL ROT (Macrophomina phaseolina) destroyed about 20 percent of plants near edge of one Anderson County field. Both diseases in smaller percentage of plants in Franklin County field. (Sim).

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Heavy in soybeans in some Le Flore County areas. Defoliation up to 15 percent in scattered fields near heavily damaged alfalfa in several east-central counties. (OK Coop. Sur.). SOUTH CAROLINA - Larvae light to heavy (1-10 per foot of row), damaged 10 peanut fields in Sumter County week of August 13. Ranged from second to sixth instar. Controls recommended. (French).

GREEN CLOVERWORM (Plathypena scabra) - ALABAMA - Heavier in soybean fields in south and central areas than past 5+ years, damage noneconomic. Leaf loss 1-8 percent in 10-15 fields with various age larvae at 2-35 per 6 feet of row. (Stephenson et al.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - No fields exceeded action threshold in 14 soybean fields in Richmond County. Highest number of adults in any field 53 per 30 row feet. (Allen).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - ILLINOIS - Soybean infestations scattered, localized in dry areas around State. Leaf drop in some fields. (IL Pest Sur.). WISCONSIN - Heavy in Iowa County soybean field, and heavy in unirrigated portions of soybean fields in Waushara County. Nymphs very numerous in Waushara County fields. Populations likely to increase if conditions remain hot and dry. (WI Pest Sur.).

PEANUTS

INSECTS

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - FLORIDA - About 200 of 2,000 acres of peanuts retreated in scattered fields in Alachua, Levy, and Marion Counties August 13. (FL Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - TEXAS - Heavy in one peanut field in McCulloch County, plants with at least one borer averaged 75 percent. Light in Mason County. (Wilson). ALABAMA - Larvae damaged peanuts in several fields in Pike and Covington Counties. (Linder et al.). SOUTH CAROLINA - Very heavy in some areas of Sumter County, damaged pegs and pods. Damage greater in areas dry for extended periods. Controls recommended. (French).

COTTON

INSECTS

BOLL WEEVIL (*Anthonomus grandis*) - TEXAS - Punctured squares up to 70 percent in untreated late-planted cotton in Milam County. Punctured squares up to 30 percent in many late fields in Ellis and Navarro Counties. Heavy in Wingate, Runnels County, area. Punctured squares up to 80 percent, others with 10-15 percent damage squares. Damage up to 74 percent in 29 percent of fields in Howard County. Infested 18 farms in St. Lawrence, Glasscock County, area. Damage below 10 percent in most fields, 15-22 percent in several St. Lawrence area fields. Light in isolated fields in Glasscock and Reagan Counties. Punctured squares 15-75 percent in isolated Howard County fields. (Glodt et al.). OKLAHOMA - Percent punctured squares by county: Kiowa 0-60, Tillman 0-34, Harmon 0-32, Washita and Caddo 20-45. Pheromone trap counts by county (number of traps): Greer 6 (25), Jackson 8 (24). Weevils present in most fields, ranged up to 42 per 100 blooms. (OK Coop. Sur.). ALABAMA - Infestation damage 2-25 percent in most fields statewide. Control efforts underway in extreme north area in most fields as infestation reached economic levels. Control efforts good statewide. (McQueen). TENNESSEE - Punctured cotton squares 2-47 percent in fields in southern tier of counties in west area. First generation active in rank cotton, second generation expected about August 27. Bloom feeding very evident in all fields. Dry weather seem to be controlling weevils in many fields, present conditions not favorable for increases. (Locke).

BOLLWORMS (*Heliothis* spp.) - TEXAS - *H. zea* adults increased on cotton in St. Lawrence, Glasscock County, area. Few small larvae in north Reagan County. Infested fields 82 percent in Howard County, heaviest damage 10 percent. Eggs light in 4 percent of Howard County fields. Infested fields decreased from 80 to 77 percent in Martin County, heaviest percent damaged decreased from 29 to 15. Percent of fields with eggs remained same in Howard County. Activity light in most fields across Trans-Pecos area. Eggs per 100 plant terminals 0-15 in Pecos and Reeves Counties and 0-10 in isolated fields in El Paso, Hudspeth, Glasscock, Upton, Midland, Reagan, Howard, and Martin Counties. Larvae 0-3 per 100 plant terminals with 0-6 percent damaged squares and increased adults across Trans-Pecos area. Adult activity increased, eggs remained light (2-4 percent) in the San Elizario, Socorro, and Clint areas of El Paso County. Eggs increased, with 10-21 percent white in most fields, in Hudspeth County; averaged 14-15 percent. Eggs decreased in most of Ellis County, light to moderate in Kerens, Navarro County, area. *H. zea* and *H. virescens* increased in Ellis and Navarro Counties, larvae up to 26 percent. Egg laying light in Hale County with 0-3 percent of plants infested. Eggs increased in some fields in High Plains. Damaging infestations in some fields in Tom Green and Runnels Counties. Eggs and larvae about 10 per 100 terminals in San Angelo area. (Lee et al.).

OKLAHOMA - *H. zea* eggs up to 34 per 100 terminals, larvae up to 11 and damaged squares up to 16 percent in southwest counties. (OK Coop. Sur.). ALABAMA - Bollworms generally light statewide. Some *H. virescens* adults on cotton in Lee County. *H. zea* predominant species. (McQueen). GEORGIA - Bollworm eggs 700+ per 100

terminals in one Dooley County field week of August 14. (Adams).
TENNESSEE - All stages of bollworms found, populations above control levels in many rank cotton fields. Small newly hatched larvae predominant in rank cotton, egg laying heavy. Eggs found down in plant as well as in terminals. (Locke). NORTH CAROLINA - Heliothis zea eggs in cotton terminals very heavy in Halifax, Edgecombe, and Northampton Counties week of August 13; 100 per 100 terminals noted. "Hatchout" heavy (up to 20 percent damage) in some fields where aerial treatments interrupted. (Hunt, Robertson).

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Treatments applied to 4 cotton fields in Jefferson County. Economic infestations in cotton rare in State. (Boyer).

CABBAGE LOOPER (Trichoplusia ni) - OKLAHOMA - Defoliation up to 75 percent in scattered cotton fields in Washita and McClain Counties. Controls reduced counts but somewhat less than satisfactory. (OK Coop. Sur.).

SUGAR BEETS

INSECTS

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - UTAH - Moved from recently cut alfalfa field up to 1,200 feet into nearby large sugar beet field in Garland area of Box Elder County. Many beets completely defoliated. Controls applied. (Francom).

MISCELLANEOUS FIELD CROPS

INSECTS

SUNFLOWER MOTH (Homoeosoma electellum) - NORTH DAKOTA - This species and BANDED SUNFLOWER MOTH (Phalonia hospes) larvae light in sunflower fields in Hettinger County. Some controls applied. (Scholl).

BANDED SUNFLOWER MOTH (Phalonia hospes) - MINNESOTA - Damaged sunflowers in western half of Norman County and southwest corner of Polk County. No controls needed. (MN Pest Rpt.).

POTATOES, TOMATOES, PEPPERS

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - WISCONSIN - Noted on late potatoes in Spring Green, Sauk County, area and on cucumbers in Central Sands. Additional treatment of susceptible crops may be needed. (WI Pest Sur.).

BLACK CUTWORM (Agrotis ipsilon) - RHODE ISLAND - Some tuber damage to early varieties of commercial potatoes in Washington County. (Partyka).

FALL ARMYWORM (Spodoptera frugiperda) - MARYLAND - Light in Eastern Shore counties, indicators point to likely outbreak on peppers next 7 days. (U. Md., Ent. Dept.).

CABBAGE LOOPER (Trichoplusia ni) - MARYLAND - Becoming significant on tomatoes and lima beans on Southern Eastern Shore. (U. Md., Ent. Dept.).

POTATO APHID (Macrosiphum euphorbiae) - WISCONSIN - Counts of 35 per sweep in Portage County potato field. Light on potatoes in Spring Green area. (WI Pest Sur.).

BEANS AND PEAS

DISEASES

BEAN RUST (Uromyces phaseoli var. typica) - MICHIGAN - Heavy outbreaks on navy beans south of Sandusky, Sanilac County, and north of Pigeon and south of Bad Axe, Huron County, week of August 13. Aerial sprays applied in several fields in Sanilac County. (Andersen).

HAWAII PEST REPORT

Detection - BROAD MITE (Polyphagotarsonemus latus) light in backyard planting of lima beans at Kaunakakai, Molokai, and TEXAS CITRUS MITE (Eutetranychus banksi) moderate on goa beans and lima beans at Kaunakakai and Maunaloa, Molokai, August 13, 1976. Collected by L. Nakahara. Determined by F. Haramoto. These are new island records. BROWN CITRUS APHID (Toxoptera citricida) infestations heavy, caused moderate damage to terminals of several backyard Citrus sp. trees at Kaunakakai, Molokai, August 13, 1976. Collected and determined by L. Nakahara. This is a new island record. CLOUDYWINGED WHITEFLY (Dialeurodes citrifolii) infestations moderate, damage light on foliage of backyard Citrus sp. trees at Kaunakakai, Molokai, August 12, 1976. Collected by J. Ah Sam and L. Nakahara. Determined by J. Beardsley. This is a new island record. Previously reported from Hawaii, Oahu, and Kauai. (Ah Sam, L. Nakahara).

General Vegetables - CARMINE SPIDER MITE (Tetranychus cinnabarinus) infestations and damage moderate to heavy on 2 acres of soybeans, 75 percent of leaves colonized at Hoolehua, Molokai. Practically nil on 3.5 acres of watermelon. LEAFMINER FLIES (Liriomyza spp.) moderate (50 percent of leaves mined) in 0.5 acre of watermelon at Hoolehua, Molokai. Infestation practically nil in 3 acres of same crop upwind at Hoolehua. MELON FLY (Dacus cucurbitae) light on 3.5 acres of watermelon at Hoolehua, Molokai, due to bait spraying. D. cucurbitae and ORIENTAL FRUIT FLY (D. dorsalis) heavy at Maunaloa. (Ah Sam, L. Nakahara).

Fruits and Nuts - BANANA SKIPPER (Erionota thrax) infestations moderate on several banana trees at Maunaloa, Molokai. Parasitism by Apanteles erionotae (a braconid wasp) moderate at 48 percent. (Ah Sam, L. Nakahara).

DECIDUOUS FRUITS AND NUTS

INSECTS

CODLING MOTH (Laspeyresia pomonella) - UTAH - Ranged 14-44 (averaged 24) per pheromone trap at North Logan, Cache County, August 9-16. (Davis).

PLUM GOUGER (Coccotorus scutellaris) - NEW MEXICO - Collected from plums at Portales, Roosevelt County, by B. Smith, July 20, 1976. Determined by D.R. Whitehead. This is a new county record. (NM Coop. Rpt.).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - Dissections of 10 apples from untreated Columbia County site showed 8 with injury; an increase over last 21 days. (WI Pest Sur.).

EUROPEAN RED MITE (Panonychus ulmi) - PENNSYLVANIA - Averaged 20 mites per leaf on Red Delicious apples in Lycoming County. Average of 54 Stethorus punctum (a lady beetle) also reported on same trees. (Tetrault).

PACIFIC SPIDER MITE (Tetranychus pacificus) - CALIFORNIA - Required treatments on commercial almonds and peaches. (CA Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Heavy on pecans throughout San Angelo area. Light to moderate in Crockett County. (Wilson, Neeb).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Light to moderate on pecans in Mayes County. (OK Coop. Sur.).

ORNAMENTALS

DISEASES

IPOMOEAE WHITE RUST (Albugo ipomoeae-panduratae) - KANSAS - Generally heavy on Ipomoea hederacea (ivy leaf morningglory) in Morris, Lyon, Linn, Coffey, Woodson, and Cherokee Counties. (Sim).

A SPIRAL NEMATODE (Helicotylenchus pseudorobustus) - TENNESSEE - This species and A LESION NEMATODE (Pratylenchus sp.) heavy in soil and root samples of Ficus sp. at Memphis, Shelby County. (Harrison, Kaltreider).

INSECTS

A WEEVIL (Otiorhynchus cribricollis) - NEVADA - Collected on lilac at Tonopah, Nye County, by R.C. Bechtel and J.B. Knight August 8, 1976. Determined by R.C. Bechtel. This is a new county record. (Bechtel).

A WEEVIL (Otiorhynchus meridionalis) - NEVADA - Collected on lilac at Hawthorne, Mineral County, by R.C. Bechtel and J.B. Knight July 19, 1976. Determined by R.C. Bechtel. This is a new county record. (Bechtel).

FOREST AND SHADE TREES

DISEASES

OAK WILT (Ceratocystis fagacearum) - WISCONSIN - Black and red oak of Adams, Wood, Juneau, Columbia, and Sauk Counties showed marked increase in number of diseased trees primarily where older pockets established. (WI Pest Sur.).

INSECTS

FALL CANKERWORM (Alsophila pometaria) - PENNSYLVANIA - Widespread outbreak developed over many areas of State, predominantly in northern counties. Total defoliation 1,362,593 acres, but nearly half light. Cold weather and late frosts in May apparently kept severity at relatively low level over large areas. (Kim).

SADDLED PROMINENT (Heterocampa guttivitta) - WISCONSIN - Heavy on Washington Island maples, resulted in heavy defoliation. (WI Pest Sur.).

MIMOSA WEBWORM (Homadaula anisocentra) - OKLAHOMA - Light to moderate on several mimosa trees at Anadarko, Caddo County, August 17, 1976. Collected and determined by D.C. Arnold. This is a new county record. (OK Coop. Sur.). IOWA - Second-generation adults still active and laying eggs in locust trees in Story County. Second-generation larvae present. (DeWitt).

ELM LEAF BEETLE (Pyrrhalta luteola) - CALIFORNIA - Adult and larval damage to residential elm plantings widespread and heavy. (CA Coop. Rpt.). OREGON - First adults of second generation noted on American elms in Ladd District, Portland, Multnomah County, August 10. (Penrose).

LARGER ELM LEAF BEETLE (Monocesta coryli) - SOUTH CAROLINA - Moderately damaged birch trees in Lancaster County week of August 13. (Gowen).

A SCOLYTID BEETLE (Xylosandrus compactus) - LOUISIANA - Collected from Magnolia grandiflora (southern magnolia) at New Orleans, Orleans Parish, by E.A. Cancienne May 6, 1976. Determined by D.M. Anderson. This is a new State record. (Cancienne).

A TREEHOPPER (Platycotis vittata) - VIRGINIA - Adults heavy, infested about 150 Chinese chestnuts in campground on Blue Ridge Parkway in Floyd County. No eggs noted. (Allen).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - TEXAS - Heavy on livestock in San Angelo area. Moderate to heavy in Glasscock, Winkler, Pecos, Terrell, and Crockett Counties. (Wilson, Neeb). OKLAHOMA - Moderate on cattle in Hughes County. (OK Coop. Sur.). NEBRASKA - Relatively unchanged past 21 days; averaged 500+ per head on untreated cattle in southwest district. (Campbell). IOWA - Averaged 202 per animal

on untreated Angus cattle in Story County. Populations increased. (DeWitt). FLORIDA - Ten untreated beef cattle averaged 244 per animal near Gainesville, Alachua County; averaged 696 per animal on 30 beef cattle and 25 per horse near Ocala, Marion County. (FL Coop. Sur.). INDIANA - Averaged 11 per side on 10 mixed-breed steers being fed out in Tippecanoe County; average 10 per side on 10 mixed-breed cattle on pasture. (Meyer). MISSISSIPPI - Adult averaged 150-200 per animal on cattle in Winston, Oktibbeha, Neshoba, Kemper, Noxubee, and Lowndes Counties. (Anderson).

FACE FLY (Musca autumnalis) - NEBRASKA - Relatively unchanged past 21 days, averaged 10 per face on untreated cattle in southwest district. (Campbell). IOWA - Averaged 16.5 per head on untreated Angus cattle in Story County. (DeWitt). INDIANA - Averaged 5 per face on 10 mixed-breed steers being fed out in Tippecanoe County. Averaged 24 per face on 10 mixed-breed cattle on pasture. (Meyer).

STABLE FLY (Stomoxys calcitrans) - NEBRASKA - Decreased slightly to average 7.5 per leg on untreated cattle in southwest district. (Campbell).

MOSQUITOES - MASSACHUSETTS - Aedes vexans adults increasing in Middlesex County, some larvae from previous rains present. A. vexans, A. trivittatus, and Psorophora ciliata emerged in Hampshire County. Anopheles walkeri, A. punctipennis, Culex salinarius, and C. restuans moderately heavy. Some Coquillettidia perturbans present, some Anopheles quadrimaculatus appearing. (Edman).

EAR TICK (Otobius megnini) - TEXAS - Problems on livestock in Concho, Callahan, Tom Green, and Irion counties. (Wilson).

FEDERAL AND STATE PROGRAMS

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - CALIFORNIA - Elm trees treated in Marin County: 4 dead, 7 exposed, and one confirmed infected. Several trees directly east of site show heavy streaking with little or no wilting. Napa County resamples submitted positive from previously confirmed elm and adjacent tree with disease symptoms at Rutherford. Elm trees within 1,000 feet of confirmed infected tree on campus in Santa Clara and San Mateo Counties treated. Mapping of trees proposed for removal completed. Infected elms along State Highway 82 to be pruned. (CA Coop. Rpt.).

INSECTS

GRASSHOPPERS - UTAH - Damage moderate to some small grain fields in Washington County. (Huber). KANSAS - Mainly Melanoplus keeleri. averaged 5-12 per square yard in commercial bluegrass sod in Johnson County. (Bell). SOUTH DAKOTA - Economically infested area (6-40 per square yard) from Wasta, Pennington County, to Cherry Creek, Zeibach County, along Cheyenne River week of August 11. Melanoplus sanguinipes, M. packardii, Mermiria maculipennis, and Trachyrhachys kiowa predominant species. About 20,000 acres economically infested at Hot Springs, Fall River County. Melanoplus sanguinipes,

M. bivittatus, and Camnula pellucida dominant. Infestation west of Hot Springs continued into Custer County, 30,000 acres infested by M. sanguinipes, M. bivittatus, and C. pellucida. (Walgenbach). NORTH DAKOTA - Adult survey underway. Fields and margins in Hettinger County fewer than one to 12 per square yard. Averaged 3 per square yard in margins and one in fields. Marginal and field counts in Bowman and field counts in Adams fewer than one to 8 per square yard. Margins in Adams ranged less than one to 12. Marginal counts in Adams and Bowman Counties averaged 4 per square yard; field counts in Adams averaged 2 per square yard. Marginal counts in Grant County fewer than one to 5 (averaged 2) per square yard; field counts ranged fewer than one to 3 (averaged one) per square yard. Marginal counts in Kidder County ranged fewer than one to 4 per square yard; field counts ranged fewer than one to 12; marginal and field counts averaged 2 per square yard. Dominant species Melanoplus bivittatus; M. sanguinipes and M. femurrubrum also present. (Scholl).

MINNESOTA - Adult survey underway. Averaged 5-9 per square yard in corn and 9-14 per square yard in margins in west-central area. Damage concentrated southwest of Otter Tail County, southeast of Wilkin County, and western border of Swift and Chippewa, Big Stone and Traverse Counties. Averaged 1-2 per square yard on alfalfa and 7 per square yard in margins in northwest area. Predominant species Melanoplus femurrubrum 75 percent and M. bivittatus 20 percent. Some corn damaged in Big Stone, Traverse, Swift and Chippewa Counties. (MN Pest Rpt.).

GYPSY MOTH (Lymantria dispar) - ALABAMA - Male moth taken from trap at Lillian, Baldwin County, by R.C. Golf July 14, 1976. Determined by J. Litton, confirmed by E.L. Todd. This is a first find for this county. (Bloch). PENNSYLVANIA - Male moth flight tapered off in Black Moshannon State Park, Centre County. (Mastro). WEST VIRGINIA - Three male moths trapped in sex lure traps in Berkeley County, August 9-10. (Tustin).

JAPANESE BEETLE (Popillia japonica) - WEST VIRGINIA - Adults removed 10 percent of silks in several corn fields in Pendleton County. (Hacker). RHODE ISLAND - Some localized problems in preferred host plants in Washington and Providence Counties. (Wallace, King). VERMONT - Very active in some areas week of August 11. Heavy on grasses, shrubs, and trees. (MacCollom).

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - Trap inspections negative. Fruit collection continued in 9-square-mile core area. (CA Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Populations exceptionally light and increasing slowly in Imperial County. (CA Coop Rpt.).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Moved into corn and grain sorghum southeast of Clayton, Union County. (NM Coop. Rpt.).

SCREWORM (Cochliomyia hominivorax) - Total of 2,860 cases reported from continental U.S. August 1-14 as follows: Arkansas 1, Oklahoma 7, Texas 2,835, New Mexico 3, Arizona 13. Total of 897 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 935 cases reported in Mexico south of Barrier Zone. Number of

sterile flies released this period totaled 275,700,000 as follows: Oklahoma 720, Texas 228,045,000, New Mexico 11,034,000, Arizona 35,541,000. Total of 12,015,000 sterile flies released within Barrier of Mexico. (Vet. Serv.).

WHITEFRINGED BEETLES (*Graphognathus* spp.). - ALABAMA - Adults on soybeans in Houston and Baldwin Counties and in flower beds at residence in Madison County. (Stephenson et al.).

DETECTION

NEW STATE RECORD

INSECTS

A SCOLYTID BEETLE (*Xylosandrus compactus*) - LOUISIANA - Orleans Parish. (p. 558).

NEW COUNTY AND ISLAND RECORDS

INSECTS

BROAD MITE (*Polyphagotarsonemus latus*) - HAWAII - Molokai (p. 556).

BROWN CITRUS APHID (*Toxoptera citricida*) - HAWAII - Molokai (p. 556).

CLOUDYWINGED WHITEFLY (*Dialeurodes citrifolii*) - HAWAII - Molokai (p. 556).

A FLEAHOPPER (*Spanogonicus albofasciatus*) - NEVADA - Esmeralda (p. 552).

MIMOSA WEBWORM (*Homadaula anisocentra*) - OKLAHOMA - Caddo (p. 558).

PLUM GOUGER (*Coccotorus scutellaris*) - NEW MEXICO - Roosevelt (p. 557).

TEXAS CITRUS MITE (*Eutetranychus banksi*) - HAWAII - Molokai (p. 556).

A WEEVIL (*Otiorhynchus cribricollis*) - NEVADA - Nye (p. 557).

A WEEVIL (*Otiorhynchus meridionalis*) - NEVADA - Mineral (p. 557).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - ILLINOIS - Jasper, Marion; INDIANA - Hancock, Hendricks, Vigo, Sullivan, Greene, Clay, Owen, Morgan, Johnson, Shelby, Rush, Henry; OHIO - Seneca, Wyandot, Richland (p. 550).

CORRECTIONS

CPPR 1(32):515 - GRASSHOPPERS - OREGON - ... controls planned ... should read no controls planned ... (Penrose).

CPPR 1(33):534 - IMPOMOEAE WHITE RUST (*Albugo impomoeae-panduratae*) ... should read ... IPOMOEAE WHITE RUST (*Albugo ipomoeae-panduratae*) ...

[illegible]

[illegible][illegible]

Exotic Pests in International Commerce

Plant Importation and Technical Support Staff

The following is a list of exotic plant pests which quarantine authorities have recently prevented from entering the United States.

	<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Ceratitis sp.</u> a tephritid fly	larval	in 2 pounds of tomatoes in mail	New York	Liberia	NY
<u>Ips sexdentatus</u> (Boerner) a scolytid beetle	adult	under bark of 100 tons of wood dunnage	Wallingford	Spain	CT
<u>Orthotomicus erosus</u> (Wollaston) a scolytid beetle	adult	under bark of 19 crates of tile	New York	Italy	NJ
<u>Taphrorhynchus villifrons</u> (Dufour) a scolytid beetle	adult	in wood of 3 cases of machinery	New York	Spain	NY
<u>Bradybaena serotina</u> A. Adams a snail	adult	on 21 crates of tire chains	San Francisco	Okinawa	CA
<u>Helicella cretica</u> (Ferussac) a snail	adult	on 6 cargo container vans	Baltimore	Greece	OH
<u>Helicella maritima</u> Draparnaud a snail	adult	on 3 pallets of military cargo	Norfolk	Italy	VA

Reprinted from Weekly Weather and Crop Bulletin Supplied by the National Weather Service, NOAA.

HIGHLIGHTS: Although cool temperatures covered much of the Nation throughout the week, some hot weather heated Kansas and the Dakotas. In both instances, new records broke long-standing old ones. Tropical storm Dottie moved inland to South Carolina and pummeled both Carolinas with heavy rains and high winds, although she lost her tropical storm status while inland.

TEMPERATURE AND PRECIPITATION: Cool early morning temperatures persisted over a large portion of the country on Monday. As the day evolved, readings ranged in the 70's in the northern and middle Atlantic Coast States, across the middle Mississippi Valley, and from the Rockies into the Pacific Northwest. Seasonable 80's prevailed across the southern third of the Nation, as parts of Kansas ranged from 90 degrees to more than 100 degrees. Although limited precipitation fell in most of the country, a thunderstorm delivered heavy rains of more than one inch in just 1.5 hours in the southern coastal area of North Carolina. A heavy thundershower also dumped nearly 1.5 inches of rain at Ellington Air Force Base, Texas, in a 6-hour period. Isolated severe weather dotted the southeastern parts of the Nation with rain, gusty winds, hail, and some tornado activity. Fair and cool weather prevailed over the northeastern sections of the country. A large high pressure system, centered over lower Michigan, chilled the upper Ohio Valley and lower Great Lakes area early Tuesday morning. Minimum temperatures in the 40 degree range broke records which had endured for more than 95 years. In Michigan, Watervliet and Grand Junction reported only 38 degrees and Grand Rapids listed 45 degrees while Chicago, Illinois Midway Airport registered 48 degrees. The same high pressure system that brought cooler temperatures also brought a drier air mass that provided clear skies to much of the northern and Atlantic Coast States.

By afternoon, southerly winds pulled hot weather into portions of the northern Plains. Pierre, South Dakota, reported the hottest reading in the Nation with 108 degrees. The lower Great Lakes area and the upper Ohio Valley recovered rapidly from early morning lows, as temperatures soared to the 80 degree range. The eastern high pressure system pushed very cool air from the upper Ohio Valley into the central Appalachians, New England, and into the middle and southern Atlantic Coast states on Wednesday. Upper Michigan and New England listed lows in the 40's, while most of the remaining areas recorded minimums in the 50's, more than 15 degrees below seasonal norms. By contrast, Kansas reported temperatures in the 90's and humidity at about 70 percent. Some cities in the Dakotas registered readings well above the 100 degree mark. Showers dampened an area from western Oregon into central California. San Francisco registered about 0.25 inch of rain, which brought the city's monthly total to a record high of 0.60 inches. Tropical storm Candice formed in the western Atlantic Ocean and moved about 15 to 20 m.p.h. in a north, northeasterly direction.

Generally clear skies and light winds under a high pressure system combined to give the southeastern section of the Nation a chilly reception Thursday. North Carolina, northwest Florida, Alabama, and Mississippi reported temperatures as much as 10 to 20 degrees below normal. New England and the middle Atlantic States remained rather cool, with temperatures in the 40's in northern New England and in the 50's elsewhere. The heaviest rain in the Nation fell over southern Florida, where a tropical depression triggered some heavy showers and thundershowers. Miami reported just over 3 inches in a 24-hour period. A weak low pressure center over central California caused some locally heavy rainfall along the coast, but only light showers occurred inland. A line of heavy thunderstorms moved through northwestern Minnesota, eastern North Dakota, and central South Dakota, but limited rain fell in those areas. Other thunderstorms pushed from Texas into the central Rockies and from Florida through the southern half of the Atlantic Coast. In the late afternoon, tropical storm Dottie lingered just east of Vero Beach, Florida, with maximum wind gusts of 50 m.p.h. Tropical storm Dottie started her move inland near Charleston, South Carolina, accompanied by heavy rain and gusty winds, on Friday. Mostly cloudy skies persisted over the Pacific coast, the southeastern Coastal Plains, extreme southern Texas, and portions of Florida. Southern Texas and eastern Colorado reported a few isolated thundershowers. Elsewhere, mostly sunny skies prevailed. Temperatures pushed upward in the northern Plains, the upper Mississippi Valley, and the western Great Lakes region. Michigan, North Dakota, South Dakota, and Minnesota scored record highs and, in some cases, broke long-standing records. Although Dottie lost her tropical storm status, she still managed to drop more than 5 inches of rain in the Wilmington, North Carolina, area on Saturday. Nevada laid claim to the Nation's severe weather, as thunderstorm winds gusted to more than 60 m.p.h. at Battle Mountain and Winnemucca on Sunday. A little more than an inch of rain fell over Lovelock, Nevada.

UNITED STATES DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service
Hyattsville, Maryland 20782

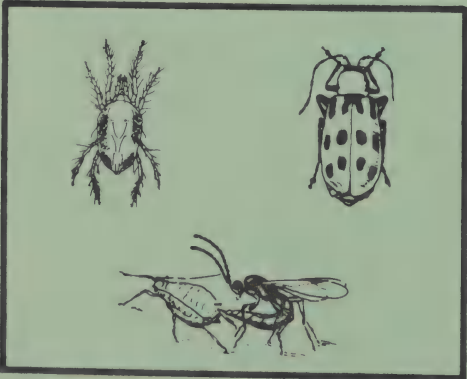
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Cooperative PLANT PEST REPORT

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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

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COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM economic on sorghum in High Plains and El Paso Valley of Texas. (p. 569).

CORN EARWORM damage to corn in New Mexico. Treatments applied to soybeans in Oklahoma and Alabama. Nearing severe levels on soybeans and peanuts in North Carolina. Heavy in blacklight traps in Maryland and Delaware. (p. 569).

New problem with a LESION NEMATODE on corn in Illinois. (p. 570).

FALL ARMYWORM heavy on sorghum in central Oklahoma (p. 570). Moderate to heavy on grass in many areas of Oklahoma and south Missouri. (p. 572). Some damage to soybeans in Oklahoma, Arkansas, and Tennessee. (p. 573). Adults 600+ per night in light trap in Kansas. (p. 581).

ELM PHLOEM NECROSIS VIRUS severe in several areas of Mississippi. (p. 578).

Cases of ST. LOUIS ENCEPHALOMYELITIS VIRUS confirmed in California and Ohio. (p. 578).

Detection

BROWN GARDEN SNAIL (p. 576) and a SUBULINID SNAIL (p. 577) are new for Nevada.

For new county records, see page 576.

Special Reports

Japanese Beetle Quarantines. Map. Centerfold.

Reports in this issue are for the week ending August 27, unless otherwise indicated.

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Japanese Beetle Quarantines. Map. Centerfold.	

SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ARMYWORM (Pseudaletia unipuncta) - TEXAS - Economic in some sorghum fields in High Plains. Found in Crosby County. Pupated, some adults emerged in Hale County. Damaged most fields in El Paso Valley. (Morrison et al.). Decreased on corn in High Plains. Infested corn in Hansford County. (Byrd et al.). Larvae 27 per square foot in some lawns in Brazos County. (Cole). MISSOURI - Armyworm larvae light, 0-9 per square foot, on fescue, brome grass, and bluegrass in northwest area. Armyworm larvae light, 0-6 per square foot, on alfalfa in north-central and northwest areas. FALL ARMYWORM (Spodoptera frugiperda) in same fields in both areas. (Munson).

CORN EARWORM (Heliothis zea) - NEW MEXICO - Light on milo and heavy on corn in Quay County. Larvae 1-3 per sheath covering tassels; damage 75-95 percent. (NM Coop. Rpt.). TEXAS - Eggs 300-400 per 100 late corn plants in Hale County. (Latham). OKLAHOMA - Ranged 0-2 per row foot of soybeans in Wagoner, Muskogee, Haskell, and Le Flore Counties. Some fields treated. Adults 12 in Greer County light trap. (OK Coop. Sur.). ALABAMA - Light on soybean pods statewide. Economic at Grangeburg, Houston County; treatments applied. Larvae 2-6 (averaged 4) per 6 feet, feeding on leaves in 2 large fields in Geneva County. Larvae infested blooms, buds, and small pods. Larvae 6-8 in one 70-acre Covington County field. (Stephenson).

SOUTH CAROLINA - Corn earworm damage moderate to heavy on about 15 acres of one-year-old peach trees in Lexington County. Controls recommended. (Jones). NORTH CAROLINA - Severely damaged sorghum heads in Piedmont and Coastal Plain. Larvae 6 per head in 20-acre Washington County field and 15-acre Chatham County field. Larvae averaged 2 or more per head in 5 fields totaling 200 acres. Controls recommended. Larvae nearing most destructive stage (1-2 inches long) in 50 percent of infested soybean fields. Total of 25 fields noted in 12 counties. Economic, 2 per foot of row, in 50 percent of open and closed canopy fields with pods 0.5 inch long. Up to 6 per foot in many open canopy fields; defoliation extensive. Population decrease in some fields indicates pupation underway. Defoliation of peanuts approaching severe level (30 percent) in some northern Coastal Plain fields. Infested all fields checked in Halifax, Edgecombe, Beaufort, and Northampton Counties. Defoliation and stem damage nearing 25 percent in 5 of 10 fields checked. Damage expected for next 14 days. (Hunt).

VIRGINIA - Corn earworm averaged 0.3 larva per 30 row feet in 29 soybean fields of 597 acres in Westmoreland County. One field reached treatment threshold. Larvae averaged 0.5 per 30 row feet in 26 fields of 736 acres in Richmond County. (Allen). MARYLAND - Soybean injury in Dorchester County. Laid eggs in many lima bean fields in central shore area. Blacklight catches heavy statewide. (U. Md., Ent. Dept.). DELAWARE - Adults in soybean fields and heavy in blacklight trap collections in most areas. (Burbutis, Kelsey). MASSACHUSETTS - Largest number of adults (23) this season captured this period in blacklight traps in Plymouth County. (Marini). NEW HAMPSHIRE - Larvae hatched and fed in ears of corn in scattered southeast localities. One larva collected at Stratham, Rockingham County, was in fourth instar. (Keating, Turmel).

CORN LEAF APHID (*Rhopalosiphum maidis*) - NEW MEXICO - Moderately heavy on milo and corn in Tucumcari and San Jon areas, Quay County. Infested majority of sheaths covering seed heads. (NM Coop. Rpt.). KANSAS - Light to moderate in whorls of late sorghum in south-central district. (Bell).

GREENBUG (*Schizaphis graminum*) - OKLAHOMA - Some scattered heavy infestations on sorghum in Washita County. Infestations completely gone in some areas. (OK Coop. Sur.).

POTATO LEAFHOPPER (*Empoasca fabae*) - INDIANA - Continued problem on alfalfa especially in northern counties but also in southern. Treatments still recommended on alfalfa not ready for harvesting. (Edwards).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEW MEXICO - Light to heavy on alfalfa with some spots dying out in Quay County fields. Heaviest infestations north of San Jon, Quay County. (NM Coop. Rpt.). KANSAS - Generally light on alfalfa in central and south-central districts; averaged up to 300 per sweep of 12-inch alfalfa in Sedgwick County. Some lower leaves yellowing. Predators very heavy, expected to control soon. (Bell).

TOMATO HORNWORM (*Manduca quinquemaculata*) - NEW MEXICO - Moderate to heavy in commercial tomato plantings in Dona Ana County. Controls applied. (NM Coop. Rpt.).

CORN, SORGHUM, SUGARCANE

DISEASES

A LESION NEMATODE (*Pratylenchus* sp.) - ILLINOIS - New corn nematode problem recently identified in Adams, Hancock, Brown, Scott, Schuyler, Whiteside, and Knox Counties. Very heavy populations associated with stunted, low-vigor, nutrient-deficient corn. Root systems reduced, fine feeder roots few. Larger roots swollen with excessive branching near tips. (IL Sur. Bull.).

INSECTS

FALL ARMYWORM (*Spodoptera frugiperda*) - KANSAS - Generally light to moderate in whorls of late sorghum in central and south-central districts. Larvae infested up to 25 percent of whorls in Sumner and Kiowa Counties. All larval stages seen, many pupated. (Bell). OKLAHOMA - Heavy on grain sorghum in Major and Lincoln Counties and on forage sorghum in Kingfisher and Okmulgee Counties. Light to moderate in late-planted sorghum in southwest counties. (OK Coop. Sur.). VIRGINIA - Continued buildup on corn. Damage concentrated in Piedmont area. Infested nearly all plants on 10 acres in Cumberland County. Severely damaged several Amelia County fields. Very dry weather worsened problems. (Allen et al.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - COLORADO - Infested 60 percent of some corn fields. Larvae averaged a little over one per plant. (Hantsbarger). TEXAS - Infested more than 80 percent of corn ears 30 miles north of Dalhart, Dallam County. (Patrick). NEBRASKA - Some larvae pupated in Brown and Rock Counties. (Bush). KANSAS - One adult in blacklight trap near Reserve, Brown County, July 20, 1976. Collected by J.W. Reese. Determined by K.O. Bell. This is a new county record. (Bell).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Decreased except on late corn, 6 percent of plants with egg masses in 2 fields in Hale County. Activity decreased in High Plains but eggs still found. Some lodging in High Plains. Egg laying peaked in panhandle. (Latham et al.).

CORN ROOTWORMS (Diabrotica spp.) - UTAH - WESTERN CORN ROOTWORM (D. virgifera) numerous on corn in Weber County fields. (Sjoblom). MINNESOTA - Diabrotica spp. adults surveyed in 34 counties so far. Five corn fields chosen at random per county. Averages of adults per acre (with averages in 1975) by district: Southeast 49,006 (53,421), south-central 46,269 (40,858), southwest 69,367 (36,680), west-central 46,098 (28,511), central 31,357 (17,478), and east-central 23,430 (10,874). Percent lodged plants (and percent in 1975) by district: Southeast 0.70 (5.00), south-central 1.45 (0.16), southwest 2.15 (4.10), west-central 2.20 (0.58), central 1.00 (1.32), and east-central 3.60 (0). Accurate determination of damage levels difficult sometimes due to very dry conditions. (MN Pest Rpt.).

ILLINOIS - Adult survey completed. D. virgifera and NORTHERN CORN ROOTWORM (D. longicornis) averaged 0.18-3.48 per corn plant in east-southeast, west-southwest, east, central, west, northeast, and northwest districts. (IL Pest Sur.). OHIO - Adult dispersal well underway. D. longicornis adults 3-12 per 100 sweeps of alfalfa in west-central area. Light to moderate on late-maturing fields of continuous corn surveyed in west-central area, field averages ranged 18-185 adults per 50 plants. Heavy in randomly selected fields in Wayne County, averages ranged 4-7.6 adults per plant. Egg laying observed. D. virgifera adults 0-75 per 50 plants. Collected on corn August 25, 1976, at Fort Loramie, Shelby County, and at Osgood, Darke County. Collections and determinations by D.R. Lewis. These are new county records. (Lewis et al.).

BANKS GRASS MITE (Oligonychus pratensis) - OKLAHOMA - Heavy in grain sorghum field in Beaver County; treated. (OK Coop. Sur.). COLORADO - O. pratensis infestations nearing ears on corn in Yuma County. Little chance of injury as corn beginning to dent. (Hantsbarger). NEBRASKA - TWOSPOTTED SPIDER MITE (Tetranychus urticae) and O. pratensis increased on corn in Antelope, Pierce, Wheeler, Merrick, York, Hamilton, Hall, Fillmore, and Buffalo Counties. Infested all 68 fields in Antelope, Pierce, and Wheeler Counties; 10 fields required treatments. (Koinzan). Potential to develop economic infestations on undented corn in east and central districts due to favorable environmental conditions. Apparently increased in fields surveyed but not moving to higher leaves. (Raun).

SMALL GRAINS

DISEASES

BARLEY SMUTS (Ustilago spp.) - MINNESOTA - Infection of 1976 barley crop surveyed in northwest district. Average percent infection in 35 fields by county: Kittson 0.25, Marshall 0.2, Norman 0.3, Polk 0.3, and Roseau 0.3. Seed with zero or very light infection planted to produce this crop. (MN Pest Rpt.).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (*Spodoptera frugiperda*) - NEW MEXICO - Building up in most corn areas. Mostly below economic thresholds. (NM Coop. Rpt.). OKLAHOMA - Still moderate to heavy in bermudagrass and fescue pastures and lawns in many areas. Reported in Major, Kingfisher, McClain, Bryan, Pontotoc, Johnston, Mayes, Craig, Tulsa, and Okmulgee Counties. (OK Coop. Sur.). MISSOURI - Moderate to heavy on fescue and orchardgrass in southern areas. Larvae up to 20 per square foot. Light to moderate on fescue, brome grass, and bluegrass in northwest area. Second and third instar larvae 0-16 per square foot. Larvae heavy, up to 30 per square foot of alfalfa in southern and central areas. Some fields in these areas treated. Second and third instar larvae 0-11 per square foot in north-central and northwest areas. (Munson). ALABAMA - Larvae destroyed hay grass in several Coastal bermudagrass fields in Covington County. Infested nearly all fields. Infestations continued on grass in lawns, pastures, and fields statewide. (Pike et al.).

YELLOWSTRIPED ARMYWORM (*Spodoptera ornithogalli*) - TENNESSEE - Damaged alfalfa and Midland bermudagrass pastures in Chester County and sudangrass, bermudagrass, soybeans, and milo in Dyer County. (Darnall, Skinner).

GRASS BUGS (*Labops* spp.) - UTAH - *L. hesperius* active and moderately heavy in Ephraim Canyon at 10,500 feet elevation and *L. hirtus* active at 8,000 feet elevation in Sanpete County. (Haws).

FORAGE LEGUMES

INSECTS

ALFALFA LOOPER (*Autographa californica*) - WASHINGTON - Pheromone trap catches at 12 locations in Whatcom and Skagit Counties totaled 254 (averaged 21.2, ranged 0-56) adults for week ending August 16; 291 (averaged 24.3, ranged 0-67) for week ending August 23. Numbers light, but increasing and therefore unusual. (Eide, Bryn).

A CECIDOMYIID MIDGE (*Contarinia texana*) - TEXAS - Increased on guar in Hardeman and Wilbarger Counties, 20-30 percent of buds infested. (Boring).

ALFALFA BLOTCH LEAFMINER (*Agromyza frontella*) - MASSACHUSETTS - Adult (and egg) averages per alfalfa tiller by county: Hampshire 25.2 (13.6) at Amherst; Franklin 9.6 (6.4) at Sunderland, 28.1 (25.8) at Deerfield, 14.3 at Northfield, 30.2 (11.8), and (32.8) at Gill. (Andaloro).

SOYBEANS

INSECTS

MEXICAN BEAN BEETLE (*Epilachna varivestis*) - INDIANA - All stages in south districts on soybeans; infestations none to severe, infested fields in some areas tended to be aggregated. Second-crop soybeans more lightly infested. (Edwards, Meyer). Infested soybeans in Tippecanoe County; infestations rare north of

Indianapolis and so far noneconomic. (Alby). VIRGINIA - Mexican bean beetle adults averaged 11.8 per 30 row feet in 29 fields of 597 acres in Westmoreland County; defoliation averaged 6.4 percent. Adults averaged 5.0 per 30 row feet in 26 fields of 736 acres in Richmond County; estimated average defoliation 2.2 percent. (Allen). MARYLAND - Second generation increasing statewide. Some fields on Eastern Shore treated. Adult and larval feeding caused economic defoliation of soybeans in Kent County. (U. Md., Ent. Dept.).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Heavy on soybeans in Okmulgee County, moderate to heavy in Mayes County. Defoliation up to 10 percent in some fields in Wagoner, Muskogee, Haskell, and Le Flore Counties. (OK Coop. Sur.). ARKANSAS - Border treatments applied to several soybean fields in all areas. Few treatments applied to entire fields. Some feeding on pods. Damaged foliage on young plants following wheat. (Boyer). TENNESSEE - Damaged soybeans (after wheat) in Hardin County and sudangrass, bermudagrass, soybeans, and milo in Dyer County. (Butler, Skinner).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - IOWA - Increased on soybeans in Story and Pocahontas Counties. Damaged leaves observed. One field retreated in Story County. (DeWitt). MISSISSIPPI - Heavy on soybeans in Coahoma County. (Anderson).

PEANUTS

INSECTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Heavy and damaging in many peanut fields in Houston, Geneva, Covington, and other southeast counties. Larvae (all ages) 5-15 per 3 feet of row on mature and maturing nuts, pegs, and stems in 2 Geneva County fields. Larvae in most fields checked in Houston County. Ten larvae taken under one hill in heavily infested 19-acre Covington County field. (Pike et al.).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Ranged 40-50 per square foot in scattered peanut fields in Caddo and Washita Counties. Heavy in Lincoln and Okmulgee Counties. (OK Coop. Sur.).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Adults 26-60 percent in diapause in south-central area. Many punctured cotton square counts 4 percent or fewer in Ellis and Navarro Counties. One field near Frost with 80 percent adults and 64 percent punctures. Square damage 50-90 percent in many fields in Fisher, Hardeman, Haskell, Jones, Knox, Wichita, and Wilbarger Counties. Square damage ranged 30-50 percent in Childress and Foard Counties. Continued to increase distribution in Howard County and St. Lawrence area. Infested 34 percent of fields in Howard County. (Cole et al.). OKLAHOMA - Percent punctured cotton squares by county: Canadian and Washita up to 50, Tillman up to 72, Jackson

36, Kiowa 40-80 in some fields, and Greer 12-38. Heavier counts mostly in dryland fields under much moisture stress and not treated. Adults 7-8 per white bloom in Washita County. Pheromone traps catches for period by county: Greer 6 in 25 traps, Jackson 8 in 24 traps. (OK Coop. Sur.).

MISSISSIPPI - Boll weevil generally remained light statewide. Percent punctured cotton squares averaged by county: Bolivar, Sunflower, and Washington 3 in 22 fields; Newton 10 in 80 acres; Lincoln 25 in 500 acres; Montgomery 6 in 46 fields; Adams 3 in 10 fields; Leake 2 in 10 fields; Itawamba 4 in 3,600 acres; Issaquena one percent in 2,000 acres; and Noxubee 3 in 2,000 acres. (Anderson). ALABAMA - Controlled throughout south and central areas. Heavy in few isolated cases. Third-generation "hatchout" heavy in north area, especially in small fields near woods. Infestations increased in many north fields due to third "hatchout" occurring about same time as dry conditions. Cotton began "cutting out," resulting in decreased squaring rate. (Smith et al.). TENNESSEE - Second generation in most cotton fields. Dry weather aided control. Some migration but some fields no longer attractive to migrating weevils. Punctured squares 4-46 percent. Some small boll damage. (Locke). Punctured squares 10-40 percent on 500 acres of cotton in Haywood County. Dry weather destroyed some second-generation larvae and pupae. (Patrick).

BOLLWORM (Heliothis zea) - TEXAS - Generally light on lush cotton in south-central area. Egg counts near Waxahachie and Frost up to 52 percent. Small larvae 4-24 percent in Ellis and Navarro Counties. Egg laying light in Brazos River area of Williamson and Milam Counties in most fields. Square damage 10-25 percent in several fields in Fisher, Jones, and Stonewall Counties. Eggs 2-109 per 100 plants in Hale County. About half of fields with up to 50 eggs per 100 plants and larvae 0-4 per 100 plants in Hale County. Less than 3 percent egg infestation in 63 percent of fields in Martin County. Egg laying increased in Martin County. In Howard County percent of fields infested dropped to 61, heaviest infestation at 3 percent, heaviest damage 5 percent, and fields infested with eggs remained 4 percent with heaviest infestation at 3 percent. Some egg counts 10-20 percent but averaged 5-7 percent in El Paso Valley. (Moore et al.).

OKLAHOMA - H. zea eggs 0-6 per 100 cotton terminals in Jackson, Tillman, Kiowa, Harmon, and Greer Counties, larvae 0-9 per 100 terminals, and damaged squares 0-18 percent. Damaged squares 20-25 percent in Canadian County and 5-10 percent in Washita County. TOBACCO BUDWORM (H. virescens) 55 percent in Grady County. (OK Coop. Sur.). ARKANSAS - H. zea and H. virescens adults in Jefferson County light traps August 19-25: H. zea 11-267 (averaged 81) per trap; H. virescens 0-11 (averaged 4) per trap. Tobacco budworm adults 4.9 percent of Heliothis total in light traps, declined farther north with 2.5 percent in St. Francis County and 1.5 percent budworm in Mississippi County. Tobacco budworm infestations variable in Desha County fields. Larvae ranged from 14 to 30 (averaged 25) percent. (Boyer).

MISSISSIPPI - H. zea and H. virescens egg laying heavy on green cotton past 7 days in most hill cotton. Eggs on up to 50 percent of terminals. Decrease in egg laying apparent. Control adequate in most hill cotton; problems in delta areas. (Anderson). ALABAMA - Scattered heavy Heliothis spp. flights occurred. Eggs 10-25 per 100 cotton plants. Fewer than 10 per night in light traps. Adult activity increased. (McQueen). TENNESSEE - All larval stages of Heliothis spp. in rank cotton. Many fields above control levels. Eggs still in terminals and down in plants. More increases expected in late cotton. (Locke). NORTH CAROLINA - H. zea infested bolls in Edgecombe and Northampton Counties increased. About 20 percent of 15 fields sampled at 10 percent infestation. From "hotspots" to 20 percent infested bolls at Gaston, Northampton County, and Red Oak, Nash County, areas. (Robertson, Nash).

MISCELLANEOUS FIELD CROPS

INSECTS

SUNFLOWER MOTH (Homoeosoma electellum) - TEXAS - Observed in blooming sunflower fields in High Plains week of August 20. Activity increased, heavy numbers in blooming fields in Hale County. (Morrison, Latham). Currently economic in most blooming fields in High Plains. Continued heavy in blooming fields in Hale County. Active in Crosby County. (Morrison et al.).

CARROT BEETLE (Bothynus gibbosus) - TEXAS - Adults per trap in sunflowers by county August 15-21: Bailey 45; Briscoe 368; Cochran 221; Crosby 9,680; Dawson 368; Dickens 284; Donley 1,135; Floyd 3,710; Gaines 20; Hale 20; Hockley 552; Knox 3,290; Lamb 237; Lubbock 28; Lynn 759; Swisher 3; Terry 548; and Yoakum 32. (Morrison).

POTATOES, TOMATOES, PEPPERS

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Infestation averaged 15 percent in untreated mature sweet peppers in western Sussex County. (Burbutis, Kelsey).

CABBAGE LOOPER (Trichoplusia ni) - RHODE ISLAND - Continued problem in Washington County on late variety of commercial potatoes. (Partyka).

POTATO FLEA BEETLE (Epitrix cucumeris) - NORTH DAKOTA - Adult shotholes on not more than one percent of potato leaves in Traill County. Feeding activity unusually late due to stage of development of potatoes. (Scholl).

TOMATO PINWORM (Keiferia lycopersicella) - TEXAS - Heavy in several counties in south-central area. Damaged foliage and fruit of tomatoes in Wichita and Wilbarger Counties. (Cole, Boring).

GREEN PEACH APHID (Myzus persicae) - OREGON - Alates taken in 17 of 36 yellow bait pans located in commercial potato fields in mid-Columbia River area August 18-24. Counts ranged 1-119. (Maxwell).

COLE CROPS

INSECTS

BEET ARMYWORM (Spodoptera exigua) - NEW MEXICO - Moderate to heavy on Dona Ana County Lettuce. Controls applied. (NM Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - NEVADA - This species and IMPORTED CABBAGEWORM (Pieris rapae) larvae moderate to heavy on broccoli, Brussels sprouts, cabbage, and horseradish in gardens at Reno, Washoe County, and Lovelock, Pershing County. (Ayres, Knight).

GENERAL VEGETABLES

INSECTS

ASPARAGUS BEETLE (Crioceris asparagi) - NEVADA - Adult and larval damage moderate to heavy to garden asparagus at Fallon, Churchill County, and Reno, Washoe County. (Miller, Roberts). Collected on asparagus at Reno, Washoe County, by M.H. Roberts, August 24, 1976. Determined by R.C. Bechtel. This is a new county record. (Bechtel).

DETECTION

NEW STATE RECORDS

SLUGS AND SNAILS

BROWN GARDEN SNAIL (Helix aspersa) - NEVADA - Collected on various garden plants at Las Vegas, Clark County, by R.C. Bechtel and D.F. Zoller, October 18, 1972. Determined by R.C. Bechtel. (Bechtel).

A SUBULINID SNAIL (Rumina decollata) - NEVADA - Clark County. (p. 577).

NEW COUNTY RECORDS

INSECTS

ASPARAGUS BEETLE (Crioceris asparagi) - NEVADA - Washoe. (p. 576).

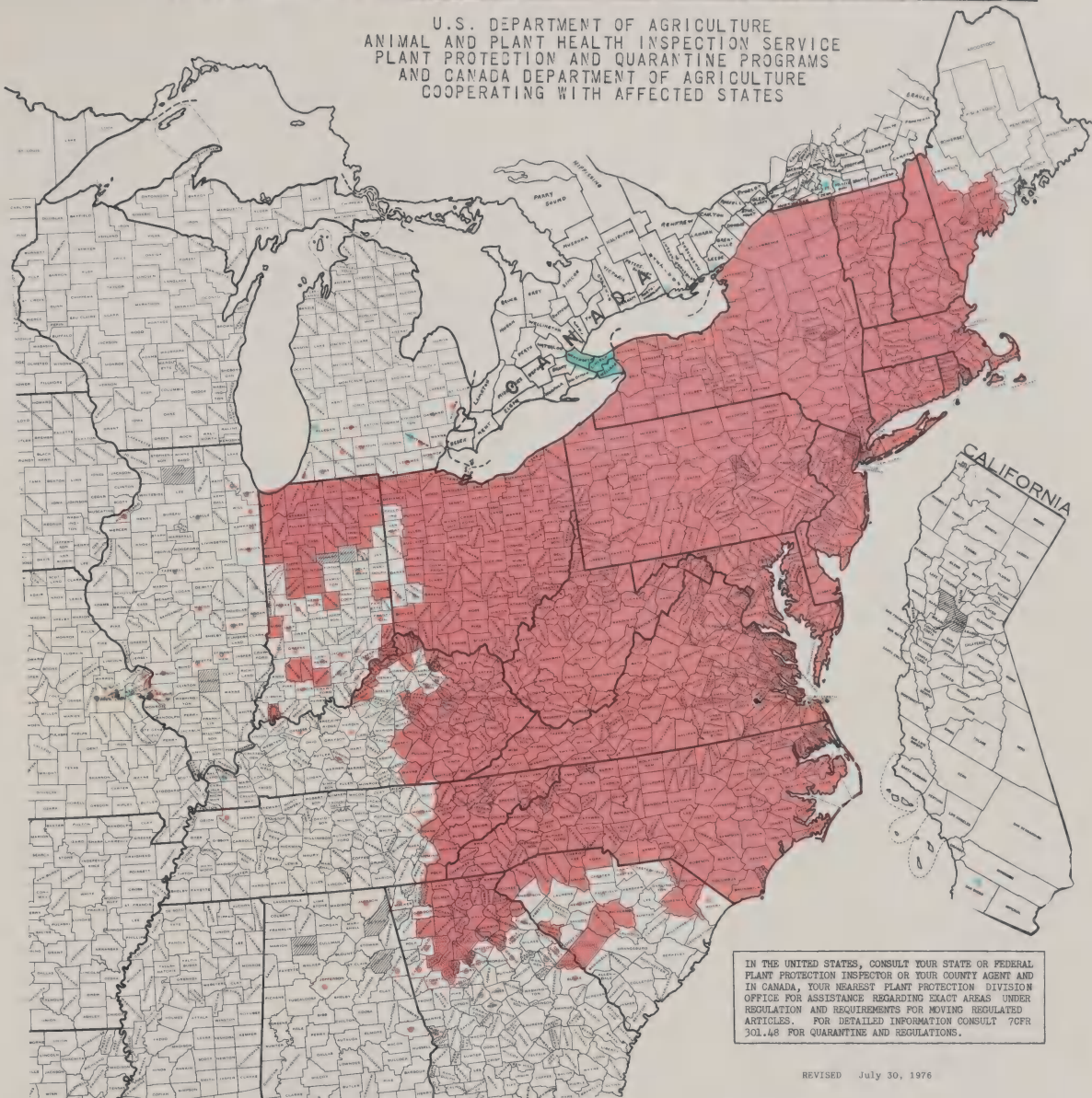
WESTERN CORN ROOTWORM (Diabrotica virgifera) - OHIO - Shelby, Darke. (p. 571).

FACE FLY (Musca autumnalis) - OKLAHOMA - Sequoyah. (p. 578).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - KANSAS - Brown. (p. 570).

JAPANESE BEETLE QUARANTINES

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
AND CANADA DEPARTMENT OF AGRICULTURE
COOPERATING WITH AFFECTED STATES



IN THE UNITED STATES, CONSULT YOUR STATE OR FEDERAL PLANT PROTECTION INSPECTOR OR YOUR COUNTY AGENT AND IN CANADA, YOUR NEAREST PLANT PROTECTION DIVISION OFFICE FOR ASSISTANCE REGARDING EXACT AREAS UNDER REGULATION AND REQUIREMENTS FOR MOVING REGULATED ARTICLES. FOR DETAILED INFORMATION CONSULT 7CFR 301.48 FOR QUARANTINE AND REGULATIONS.

REVISED July 30, 1976

COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED;
COUNTIES WITH COLORED DOT ARE PARTIALLY REGULATED.

GENERALLY INFESTED AREA - STATE AND FEDERAL REGULATIONS.
(ERADICATION TREATMENTS NOT IN PROGRESS OR PLANNED.)

SUPPRESSIVE AREA - STATE, FEDERAL, AND CANADIAN REGULATIONS.
(ERADICATION TREATMENTS APPLIED OR IN PROGRESS)

STATE REGULATIONS ONLY.
(ERADICATION TREATMENTS APPLIED OR IN PROGRESS)

ERADICATED - REGULATIONS REMOVED.

RESTRICTIONS ARE IMPOSED ON THE MOVEMENT OF
REGULATED ARTICLES FROM A REGULATED AREA
AS FOLLOWS:

1. RED INTO OR THROUGH GREEN, BLUE, OR WHITE.
2. GREEN INTO OR THROUGH BLUE OR WHITE.
3. GREEN INTO GREEN.
4. GREEN WITHIN GREEN*.
5. BLUE INTO ANY OTHER AREA**.

*WHEN IT IS DETERMINED BY THE INSPECTOR THAT
A HAZARD OF SPREAD EXISTS.

**ONLY WHEN REQUIRED BY STATE QUARANTINE
REGULATIONS OR BY AN AUTHORIZED INSPECTOR.

SEE REVERSE SIDE FOR LIST OF REGULATED ARTICLES

THE FOLLOWING REGULATED ARTICLES MOVED FROM GENERALLY INFESTED AREAS (RED) REQUIRE A CERTIFICATE OR PERMIT YEAR-ROUND EXCEPT AS INDICATED:*

1. Soil, separately or with other things.

Soil samples shipped to approved laboratories do not require attachment of certificate or permit.**

Potting soil is exempt if commercially prepared, packaged, and shipped in original containers.

2. Plants with roots, except houseplants grown in the home and not for sale greenhouse grown plants, soil-free aquatic plants, moss and Lycopodium (clubmoss or groundpine or running pine).

Transplants are exempt if substantially free of soil.***

3. Grass sod.

4. Any other products, articles, or means of conveyance of any character whatsoever, not covered by the above, when it is determined by an inspector that they present a hazard of spread of the Japanese beetle and the person in possession thereof has been so notified: *

THE FOLLOWING REGULATED ARTICLES MOVED FROM SUPPRESSIVE (GREEN) AND STATE STATE REGULATED (BLUE) AREAS REQUIRE A CERTIFICATE OR PERMIT YEAR-ROUND EXCEPT AS INDICATED:*

1. Bulk soil.

2. Any other products, articles, or means of conveyance of any character whatsoever, not covered by the above, when it is determined by an inspector that they present a hazard of spread of the Japanese beetle and the person in possession thereof has been so notified.

* See "Restrictions Imposed on Movement of Regulated Articles" on the reverse side.

** Information as to approved laboratories may be obtained from an inspector.

*** Not sufficient soil to harbor Japanese beetle larvae.

DECIDUOUS FRUITS AND NUTS

INSECTS

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Adults 2-26 in 6 light traps in Payne County pecan orchard August 18-24. Larvae heavy on walnut, hickory, and persimmon trees in some east-central sites. (OK Coop. Sur.). NEW HAMPSHIRE - Tree damage most severe in southern third of State. Defoliation from 0-10 percent in Carroll and Grafton Counties to 50-80 percent in Rockingham and Merrimack Counties. Defoliation decreased abruptly at north border of Sullivan, Merrimack, and Strafford Counties. Defoliation more severe on cherry, apple, and peach. (Burger).

CODLING MOTH (Laspeyresia pomonella) - NEW MEXICO - Activity very heavy in apple in Sandoval County orchards. Adults 100+ per week in pheromone traps past 14 days. (NM Coop. Rpt.).

APPLE APHID (Aphis pomi) - MAINE - Still threat to young nonbearing apple trees with several heavy infestations. (Gall).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Adults infested walnuts at San Jose, Santa Clara County, and in other northern counties. Cool weather and light rain extended adult season. (CA Coop. Rpt.).

SMALL FRUITS

INSECTS

A TORTRICID MOTH (Sparganothis sulfureana) - MASSACHUSETTS - Adults increased on cranberry bogs in Plymouth County. Larval injury to berries common. (Tomlinson).

BLUEBERRY MAGGOT (Rhagoletis mendax) - MASSACHUSETTS - Adults decreased in Plymouth County. Averaged 8 per trap compared with 20 for previous period. All larval sizes common in blueberries. (Tomlinson).

ORNAMENTALS

INSECTS

BAGWORM (Thyridopteryx ephemeraeformis) - TENNESSEE - Very heavy on native junipers in west area. Heavy on variety of junipers in home plantings in central area. (Locke, Gordon). KENTUCKY - Heavily defoliated arborvitae in home plantings in Jefferson and Fayette Counties. Larvae full grown and very near pupation. (Scheibner).

EUONYMUS SCALE (Unaspis euonymi) - KENTUCKY - Heavy on euonymus in Pulaski, Fayette, and Jefferson Counties. (Scheibner).

SLUGS AND SNAILS

A SUBULINID SNAIL (Rumina decollata) - NEVADA - Taken on ivy at Las Vegas, Clark County, May 6, 1976. Collected by K. Hansen. Determined by R.C. Bechtel. This is a new State record. (Bechtel).

FOREST AND SHADE TREES

DISEASES

SWISS NEEDLECAST (*Adelopus gaeumanni*) - WEST VIRGINIA - Severe on Douglas-fir trees in Mingo County. Moderate on 60-70 percent of trees on 4-acre Christmas tree planting. (Gibson, Taylor).

ELM PHLOEM NECROSIS VIRUS - MISSISSIPPI - Severe outbreak caused heavy losses of elm trees in Oktibbeha County and several other areas. Infected 75+ percent of elm trees in some areas. Transmitted by leafhoppers. (Anderson).

INSECTS

FALL WEBWORM (*Hyphantria cunea*) - TENNESSEE - Present on normal host trees in west area, unusually heavy on sourwood. (Locke). RHODE ISLAND - Many nests 3 or more feet long along rural roadsides statewide. Completely defoliated some trees in extreme northern area. (Larmie, King).

LARGER ELM LEAF BEETLE (*Monocesta coryli*) - WEST VIRGINIA - Larvae completely damaged elm trees in Mineral and Hampshire Counties. Severely damaged all trees noted. (Hacker).

A CHRYSOMELID BEETLE (*Plagiodera arizonae*) - NEVADA - Adult and larval damage moderate to heavy on black willow at Kershaw-Ryan State Park, Lincoln County. (Getts).

MAN AND ANIMALS

DISEASES

ST. LOUIS ENCEPHALOMYELITIS VIRUS (SLE) - CALIFORNIA - First case of mosquito-borne encephalomyelitis in State confirmed for 1976 by State Viral and Rickettsial Disease Laboratory. Patient exposed June 20, 1976, 1.5 miles from site where SLE positive *Culex tarsalis* (a mosquito) collected June 9 in Riverside County. First case since 5 were reported in 1973. Surveillance and control of mosquitoes intensified in area. (Cable). OHIO - Two cases in State positively identified. Transmitted by mosquitoes breeding in temporary water sources. (Lewis).

INSECTS

HORN FLY (*Haematobia irritans*) - OKLAHOMA - Range per head by county: Sequoyah 50-200, Cherokee 25-100, Mayes 200-300, Pawnee 100-200, Craig moderate. (OK Coop. Sur.). COLORADO - Averaged 100+ (up to 600+) per side on untreated cattle in Larimer County. (Hantsbarger). MISSOURI - Adults 100-150 (averaged about 300) per animal on 2 herds in northwest area. (Munson). MISSISSIPPI - Averaged 150-200 on untreated cattle in Kemper and Lauderdale Counties, 500+ on cattle in Neshoba and Attala Counties. (Anderson).

FACE FLY (*Musca autumnalis*) - OKLAHOMA - Ranged 6-8 per head in one herd and averaged less than one per head on second herd at Vian, Sequoyah County, August 25, 1976. Collected and determined by R.E. Wright. This is a new county record. Range per head by

county: Cherokee 4-20, Mayes 5-25, Rogers and Tulsa 5-10, Osage averaged 5, and Craig heavy. (OK Coop. Sur.). MISSOURI - Adults 12-50+ (averaged 29.5) per animal on 2 herds in northwest area. (Munson). MISSISSIPPI - Adult averages per face on cattle by county: Attala and Noxubee 2; Winston and Oktibbeha 4. (Anderson). OHIO - Adults 11-50 (averaged 35) per head in herd of 25 untreated Holstein steers on pasture in Mercer County. None on 1,000 treated mixed-breed steers in nearby confinement rearing system. (Lewis).

MOSQUITOES - UTAH - Annoying at Logan, Mendon, and Benson, Cache County. (Knowlton). MASSACHUSETTS - Earlier rains produced new moderate-sized broods in Hampshire County. Aedes vexans, A. cinereus, A. trivittatus, and Psorophora ciliata very active and biting at nuisance levels. Few Culex, Anopheles, and Coquillettidia sp. Culiseta melanura, Aedes vexans, and A. canadensis increased in Plymouth County. A. vexans and A. triseriatus increased in Middlesex County. (Edman et al.). NEW HAMPSHIRE - Aedes spp. adult biting increased since heavy rains week of August 13. A. vexans adults biting in wooded areas of Durham and Dover, Strafford County. Landing and biting rate estimated at 3 adults per minute. Fourth major emergence of A. sollicitans occurred August 21-22 in seacoast region; biting very heavy at edges of salt marshes. (Burger).

LONE STAR TICK (Amblyomma americanum) - OKLAHOMA - Heavy on cattle in Pontotoc County. (OK Coop. Sur.).

FEDERAL AND STATE PROGRAMS

INSECTS

GRASSHOPPERS - NEW MEXICO - Nymphs, 8-10 per square yard, hatched in Colfax County and at Folsom, Union County. (NM Coop. Rpt.). IDAHO - Melanoplus sanguinipes damaged range, potatoes, beets, and grain on 50,000-60,000 acres. Ranged 8-12 per square yard in cropland and 20-30 per square yard in some field margins near Acequia, Minidoka County. (Pollard).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Larvae banding together and migrating in small areas at Mills, Harding County, and in Mora County. Heavy migrations across Interstate Highway I-25, south of Raton, Colfax County. Heavy buildup along highways south and west of Des Moines, Union County. Large numbers of larvae began to pupate north and west of Grenville, Union County, and other northwest areas. Still fed on corn and sorghum in Union County. (NM Coop. Rpt.). TEXAS - Light on rangeland one mile north of Texline in Dallam County. (Patrick).

HAWAII PEST REPORT

General Vegetables - CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavily infested (60 percent of leaves; 20+ mites per square inch) and damaged acre of pole beans at Waianae, Oahu. Light to moderate on 0.25 acre of yardlong beans at Mikilua, Oahu, and acre of eggplant at Omaopio, Maui, and at Waianae and Pearl City, Oahu. (Chun et al.). LEAFMINER FLIES (Liriomyza spp.) infestations (80 percent of leaves heavily mined) and damage heavy on acre of pole beans at Waianae. (Miyahira et al.). GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) heavily infested (60-90 percent of foliage) and moderately damaged acre of pole beans at Waianae and on 0.25 acre of eggplant at Pearl City and Waianae. MELON FLY (Dacus cucurbitae) moderately infested and damaged 0.5 acre of cucumber (38 percent of fruits affected; 1-4 egg laying marks per fruit) at Hawaii Kai, Oahu. Infestations and damage by ONION THRIPS (Thrips tabaci), 30 percent of leaves with heavy feeding marks, 1-10 individuals per plant, and LEEK MOTH (Acrolepia assectella), 25 percent of leaves with 1-2 larvae per leaf, moderate on 2 acres of green onions at Pearl City. BEAN FLY (Ophiomyia phaseoli) moderately infested (50+ percent of petioles infested) and damaged 0.25 acre of yardlong beans at Mikilua. CABBAGE WEBWORM (Hellula rogatalis) moderately infested (20-50 percent of plants; 1-2 larvae per plant) and damaged 5,000 square feet each of white-stem cabbage and daikon at Hawaii Kai and 0.5 acre of mustard cabbage at Hawaii Kai and Waianae. (Chun, L. Nakahara).

Ornamentals - A WHITEFLY (Orchamoplatus mammaeferus) light at Maunalani Heights and Waikiki, Oahu, on variegated leafcrotton. Previously detected at Palolo, Kaimuki, and Kapahulu, Oahu. Moderate infestations (30 percent leaves colonized) on several plants at Palolo and Waikiki. Infested 31 percent of 261 leafcrotton plants in 3-square-block area at Palolo, the discovery site. Negative in citrus tree survey. (HI Dept. Agr., PPQ).

NATIONAL WEATHER SERVICE 30-DAY OUTLOOK SEPTEMBER 1976

The National Weather Service's 30-day outlook for September is for temperatures to average above seasonal normals in the northern Great Plains and the northern Mississippi Valley as well as along the California coast. Below normal averages are indicated from the interior Valley of California through the central and southern Plateau region to western portions of the central and southern Great Plains, and also over the South and East. In unspecified areas, near normal temperatures are in prospect. Precipitation is expected to exceed the median value west of the Continental Divide and over western portions of the central and southern Great Plains. Elsewhere less than the median amount is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

LIGHT TRAP COLLECTIONS

[illegible]

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

	<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Uredo sp. near nidularia</u> P. Henn. a rust	uredial	on leaves of bromeliad plants	Miami	Colombia	TX
<u>Ips acuminatus</u> Gyllenhal a scolytid beetle	adult	under bark of 100 tons of dunnage	New York	USSR	USA
<u>Metamasius hemipterus</u> (Linnaeus) a curculionid beetle	adult	at large in aircraft hold	Miami	unknown	FL
<u>Molorchus minor</u> (Linnaeus) a cerambycid beetle	adult	in wood crates of cargo	New York	West Germany	NY
<u>Pissodes notatus</u> (Fabricius) a curculionid beetle	adult	under bark of 19 crates containing marble	San Juan	Italy	PR
<u>Rhabdoscelus obscurus</u> (Boisduval) a curculionid beetle	adult	in coconuts from passenger baggage	Hawaii	Hawaii	USA
<u>Trichoferus campestris</u> (Faldermann) a cerambycid beetle	adult	in wood cases of personal effects	New York	Korea	NY
<u>Trogoderma granarium</u> Everts khapra beetle	larval	with 700 bags of pistachio nuts	New York	Iran	NY

WEATHER OF THE WEEK ENDING AUGUST 29

Reprinted from Weekly Weather and Crop Bulletin Supplied by National Weather Service, NOAA.

HIGHLIGHTS: High temperatures and thunderstorm activity dominated the Nation's weather pattern early in the week. Forecasters kept a close eye on tropical storm Emmy as she gathered force east of Bermuda. A cold front lowered temperatures for the midsection of the Nation on Friday. As the cold front continued to dominate the Nation, milder readings and thunderstorm activity prevailed for the weekend.

TEMPERATURE AND PRECIPITATION: Showers and thundershowers lingered over the northern and central Plateau region into the Rockies, western Kansas, south central Oklahoma, and southern Florida on Monday. Haze and fog shrouded the lower and middle Mississippi Valley and enveloped an area eastward to the middle and northern Atlantic Coast region. Unseasonably hot weather again dominated the Dakotas as temperatures rose to new highs. Williston, North Dakota, and Philip, South Dakota, recorded a high of 102 degrees, while the mercury climbed to 101 degrees at Pierre, South Dakota, and rounded out at 100 degrees at Dickinson, North Dakota. Hurricane Candice, located 200 miles south of Cape Race, Newfoundland, moved toward the northeast, while tropical storm Emmy pushed toward the northwest at about 16 m.p.h. from her location near Antigua. Thunderstorms built over the western Dakotas, eastern Colorado, and western portions of the Southern Plains Tuesday morning and central area throughout the day and evening. Thunderstorms from Arizona brought gusty winds which raised dust and caused traffic to be stopped in some instances. Tropical storm Emmy continued to move toward the northwest from an area 625 miles south of Bermuda. Emmy's high winds gusted to more than 60 m.p.h. and conditions remained favorable for her to reach hurricane strength.

Many of the Atlantic Coast States from southern New England, North Carolina, and through the Appalachians, received air stagnation advisories on Wednesday. A high pressure system restricted air mixing to a minimum from the upper Mississippi Valley to the middle Atlantic coast and resulted in a buildup of haze and smoke. By late afternoon, most of Minnesota, eastern Ohio, southwest and eastern Pennsylvania, southern New Jersey, Delaware, West Virginia, and southeast Texas also encountered air stagnation advisories. Thunderstorms dropped more than 3 inches of rain on Muscle Shoals, Alabama. An isolated shower brought about 2.5 inches of rain a few miles north of Rochester, Minnesota. As the day waned, patches of fair skies peeked through at New England, the southern Appalachian Mountains, and the lower Great Lakes region. A ridge of high pressure extended from the northern Atlantic States into the Ohio Valley on Thursday and resulted in light winds and poor dispersion of atmospheric pollutants. Air stagnation advisories were issued for the eastern half of North Carolina, eastern Pennsylvania, southern New Jersey, Delaware, Maryland, Virginia, and southeastern Texas.

Later in the day, severe thunderstorms hit the northern Plains, and winds gusted to more than 60 m.p.h. Thunderstorms also extended from southern New England, across the Great Lakes region, over the Appalachians, to the Gulf of Mexico coast, and the southern Atlantic coast. Almost one inch of rain fell near Tuscon, Arizona, at Sabino Canyon within a 15-minute period. This brought the rainfall grand total in the Tuscon area to 3.25 inches for the entire year. A cold front, with a cooler air mass behind it, pushed its way through the Nation's midsection on Friday. Temperatures dropped to the lower 30's in Montana, Idaho, and Wyoming. By contrast, mercuries soared to the 90 and 100 degree range through the Great Lakes area and the eastern portions of the central Plains. Thunderstorms pounded the southeastern States, through the Atlantic Coast States, and the eastern Great Lakes region, while thundershowers occupied an area from the Texas Panhandle into central Kansas. The Southwest remained warm and sunny. A cold front, which reached from the Great Lakes region through the middle Mississippi Valley into Texas, divided the Nation into 2 major weather patterns on Saturday. Clear skies and cooler, drier air dominated to the west of the front; while warm, humid conditions, cloudy to partly cloudy skies, and showers and thundershowers covered the area east of the front. Low temperatures persisted on Sunday. Sunny or partly sunny skies existed over much of the Nation. Overcast skies were restricted to parts of Texas, the lower Mississippi Valley, New England, the upper Great Lakes area, and the northern Pacific coast.

UNITED STATES DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service
Hyattsville, Maryland 20782

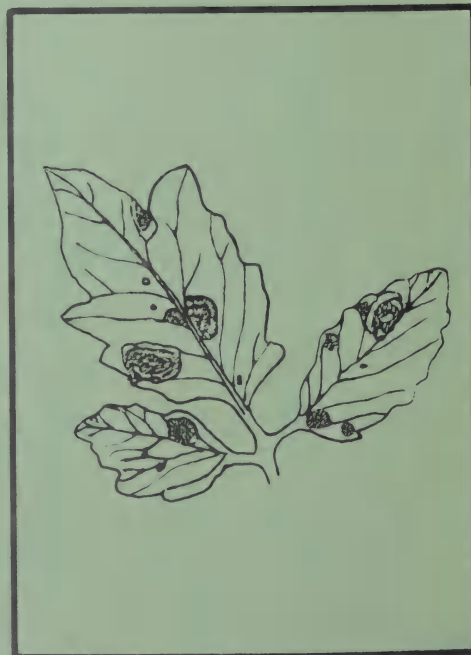
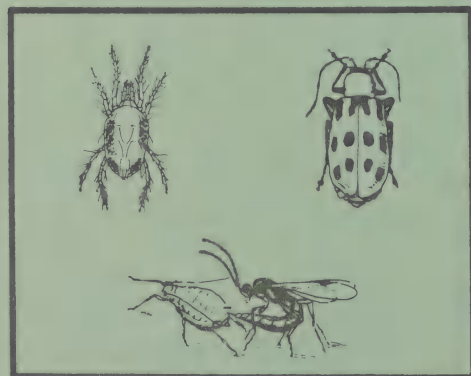
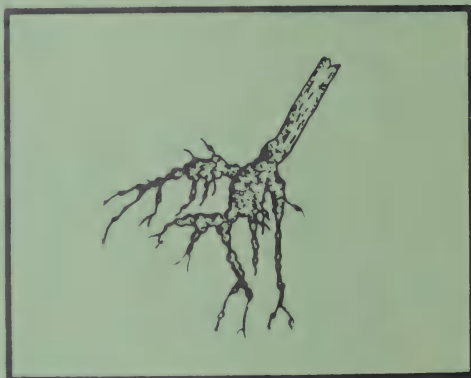
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PLANT PEST REPORT



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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

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Correspondence should be directed to:

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COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM larvae 2 per sorghum head in Texas and Kansas. Report of heavy soybean pod damage in Oklahoma. Defoliation to continue on peanuts in North Carolina. Some soybeans and peanuts treated in Virginia. Economic on soybeans and lima beans on Eastern Shore of Maryland. Damage to sweet corn potentially heavy in New Jersey. (p. 587).

Counts of 10 CORN ROOTWORM adults per corn plant in Montana, South Dakota, and Wisconsin. (p. 588).

FALL ARMYWORM heavy on sorghum (p. 589) and damaged lawns in parts of Texas and Oklahoma. Heavy on lawns, pastures, and golf courses in parts of Missouri, South Carolina, and North Carolina. (p. 590).

CAPSICI BLIGHT economic in area of New Mexico. (p. 593).

Detection

A JAPANESE WEEVIL is a new State record in Illinois. (p. 595).

For new county records, see page 598.

New host for a WEEVIL in Florida. (p. 595).

Reports in this issue are for the week ending September 3 unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

CORN EARWORM (*Heliothis zea*) - TEXAS - Heavy in sorghum heads, damaged grain not in hard dough stage in Jones and Fisher Counties. Moderate to heavy in isolated fields in Reeves, El Paso, and Hudspeth Counties. Larvae 1-2 per head in some fields (Boring et al.). Light to moderate in isolated alfalfa fields in Reeves County. (Neeb). OKLAHOMA - Averaged about one per row foot in scattered soybean fields in Craig, Ottawa, Wagoner, Haskell, Sequoyah, Muskogee, Le Flore, and Garvin Counties. Pod damage up to 50 percent in Garvin County. Some fields treated. Heavy in whorls of isolated late sorghum fields in Kay County. Damaged garden green beans in Muskogee County. (OK Coop. Sur.). KANSAS - Larvae averaged 2 per head on 80 percent of soft-dough sorghum heads in Cherokee County. Trace on sorghum heads in Labette, Allen, and Linn Counties. (Bell). WISCONSIN - Significant flights (total of 5 adults on 3 consecutive nights) in several blacklight traps in sweet corn areas in south and east regions week ending August 27. Controls applied in several areas. Currently, adults appeared regularly in many blacklight traps. Will infest small percentage of canning sweet corn in south counties and later maturing fields and garden plantings. (WI Pest Sur.).

GEORGIA - Corn earworm light to heavy on soybeans across south area week ending August 28. Ranged 4-6 per foot of row in Montgomery County peanut field. (Suber et al.). NORTH CAROLINA - Peak damage over by September 10 in most soybean fields. Large larvae in 40 percent of fields at economic threshold level in northern and central Coastal Plain. Pupation rapid statewide. Dropped below economic threshold in Duplin, Columbus, Sampson, and Robeson Counties. Defoliation continued on peanuts in Hertford, Northampton, Bertie, and Bladen Counties where not treated. Defoliation 30 percent in 3 of 10 fields in northern Coastal Plain Counties. Many small larvae still in peanuts; damage likely to continue for about 10 more days. (Hunt).

VIRGINIA - Corn earworm larvae averages per 30 row feet of soybeans by county: Northumberland 2.3 in 4 fields of 47 acres, (larval average of 450 in 3 fields not in scouting project) and Lancaster 4.7 in 11 fields of 320 acres. Larvae 2-4 per foot of row in Westmoreland County; about 1,000 acres to be treated. About 5,000 acres treated in Isle of Wight County. Soybean field in Northumberland County project reached treatment level. About 5,000 acres of peanuts treated in Isle of Wight County. (Allen, Daniel). MARYLAND - Economic on scattered soybeans and lima beans in Eastern Shore counties with up to 2 early instars per row foot in Caroline and Dorchester County soybean fields. Random blacklight trap catches in one night: Hebron 204, Star 64, Greensboro 176. (U. Md., Ent. Dept.). NEW JERSEY - Increased greatly. Traps averaged 100-200 adults per night in Cape May and Cumberland Counties. Averaged 50 per night in central areas and 1-3 per night in north counties. Heavy potential damage to sweet corn. (Ins.-Dis. Newsltr.).

GREENBUG (*Schizaphis graminum*) - TEXAS - Light on sorghum in El Paso, Hudspeth, Pecos, Reeves, Midland, Martin, Howard, and Glasscock Counties. Parasitized aphids on most plants. (Burgess, Neeb). OKLAHOMA - Averaged 1,000 per leaf in sorghum field in

Washita County. (OK Coop. Sur.). KANSAS - Greenbug up to 29 per sorghum plant in Miami County. Averaged 25 per plant on 48-inch forage sorghum in Pottawatomie County. (Bell). ILLINOIS - Killing grass beneath trees in some Champaign County lawns. (IL Pest Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - UTAH - Infested forage legumes at Delta, Deseret, Abraham, and Sutherland, Millard County. Very difficult to control this season. (Parrish). COLORADO - Increased on alfalfa in Arkansas Valley, ranged 0-3,000 per 100 sweeps. (Schweissing).

CORN, SORGHUM, SUGARCANE

DISEASES

COMMON SMUT (Ustilago maydis) - WISCONSIN - High incidence in Saukeshia, Trempealeau, and Fond du Lac Counties. Highly susceptible line in Rock County had 30-40 percent prevalence of infection throughout seed field. Incidence 1-2 percent in Grant County seed corn. Galls primarily on silk ends of ears. (WI Pest Sur.).

COMMON MAIZE RUST (Puccinia sorghi) - NEW HAMPSHIRE - Widespread on sweet corn statewide. (Turmel, Bowman). MINNESOTA - Trace on corn in west-central district. (MN Pest Rpt.).

ROOT AND STALK ROTS - NEBRASKA - Beginning to be common in corn. May become major and serious problem during harvest. Rapid disease development last 10 days alarmed farmers and other crop observers. Disease appeared earlier this year than in previous 4 years. (Wysong et al.).

INSECTS

CORN ROOTWORMS (Diabrotica spp.) - MONTANA - WESTERN CORN ROOTWORM (D. virgifera) adults averaged 6-10 per corn plant in Stillwater, Yellowstone, Custer, and Rosebud Counties week ending August 27. (Bain). SOUTH DAKOTA - Diabrotica spp. adults still heavy in irrigated fields, 10-12 per plant common. Adults concentrated due to large acreages of dryland corn cut for silage. No regrowth in small grain fields minimizes potential for damage to first-year corn. (Walgenbach). WISCONSIN - D. virgifera still heavy in late sweet corn in south counties, 5-10 adults per plant common, week ending August 27. Heavy silk clipping in many sweet corn fields, but injury occurred after pollination in most instances. Diabrotica spp. currently still heavy in most of major corn producing counties, but few fields have 3+ adults per plant. Adults up to 10 per plant in some Calumet County fields with injured kernels on ear tips. Western corn rootworm dominant species in corn. NORTHERN CORN ROOTWORM (D. longicornis) dominant in east-central area. (WI Pest Sur.). PENNSYLVANIA - D. longicornis adults actively feeding and laying eggs on corn and weeds. Adults per 20 plants by county: Bucks 25; Crawford 2, one; Indiana one; Lancaster 62; Lebanon 58; Mercer 2; Montgomery 12; Snyder one, one; Venango 25. (Maxwell et al.). NEW HAMPSHIRE - D. longicornis adults 3-8 per ear feeding on ear tips of silking corn at Lee, Strafford County. Adults about one per ear statewide. (Burger, Turmel).

FALL ARMYWORM (Spodoptera frugiperda) - FLORIDA - Infested 50 acres of grain sorghum in west Marion County August 25. Treatments applied. Currently infested buds on 150 acres of 3-week-old grain sorghum in northwest Marion County; crop required treatment. (FL Coop. Sur.). TEXAS - Heavy on younger sorghum in Childress, Haskell, and Wichita Counties. Moderate to heavy in isolated fields in Reeves, El Paso, and Hudspeth Counties. (Boring). OKLAHOMA - Still heavy in whorls of late sorghum in Kay, Washita, and Caddo Counties. Moderate in McIntosh County. (OK Coop. Sur.). KANSAS - Light whorl infestation, mostly pupated, on 48-inch forage sorghum in Pottawatomie County. (Bell).

EUROPEAN CORN BORER (Ostrinia nubilalis) - PENNSYLVANIA - Adults still active, laying eggs for overwintering larvae. Larvae per 20 cornstalks by county: Bucks 8; Crawford 3; Indiana one; Lancaster 2, 6; Lebanon 21; Mercer one; Snyder 2; Venango one. (Proseus et al.). WISCONSIN - Adults increased in blacklight traps in east-central area August 21-27 due to hot, muggy weather. Surprisingly high counts persisted in south-central, central, and west counties. Eggs on about 4 percent of plants in most sweet corn surveyed within 5-10 days of harvest in south-central area. Controls applied for this species and CORN EARWORM (Heliothis zea) in many southern fields. Current European corn borer adults declined greatly in blacklight traps at most corn sites. Eggs difficult to find in most attractive, late sweet corn fields. Little threat to most remaining fields. (WI Pest Sur.).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Light to heavy on sorghum in Pecos, Reeves, and Hudspeth Counties. (Neeb). KANSAS - O. pratensis very heavy in 2 adjacent sorghum fields in Stevens County; treatment necessary. (Bell). NEBRASKA - TWOSPOTTED SPIDER MITE (Tetranychus urticae) and O. pratensis still increased on corn in Merrick, Hall, and Fillmore Counties, but not so rapidly as in previous weeks. Most severe in 31 fields on occasional plants with colonies up to ear leaf. Colonies large enough to discolor small areas. Corn ranged from milk to dent stage. Most fields will probably be in dent stage before populations become economic. (Raun). Fields checked in Antelope and Pierce Counties beginning to dent and some fields have mite discoloration on all leaves. Chemical treatments still applied in area. (Koinzan). Currently light on corn in Brown and Rock Counties. (Bush).

SMALL GRAINS

DISEASES

OAT LOOSE SMUT (Ustilago avenae) - MICHIGAN - Heavy statewide on new oat variety in farm plantings sown with Michigan certified seed. Some older resistant varieties have shown increased susceptibility, possibly indicating new pathogen races. (Smith).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Damaged bermuda-grass lawns in Dickens, Motley, Wichita, and Wilbarger Counties. (Boring). OKLAHOMA - Continued to damage lawns in Washita, Caddo, and Canadian Counties. (OK Coop. Sur.). KANSAS - Isolated heavy infestations in lawns in Montgomery, Crawford, and Douglas Counties; most problems during periods ending August 20 and 27. Larvae averaged one per square foot in brome-grass hay meadow in Douglas County August 30. (Bell). MISSOURI - Light to moderate in pastures in southeast area. Larvae 5-12 per square foot. Heavier, up to 30 per square foot, in wet spots or small dense growth areas. (Munson). MISSISSIPPI - Still problem on all types of grasses. Treatments applied to some lawns in Oktibbeha County and grain sorghum in Noxubee County. (Anderson). SOUTH CAROLINA - Larvae very heavy, 30 per square foot, in golf course fairway at resort in Oconee County. Similar infestations in golf courses in Richland County. Controls recommended. (Alexander). Heavy in pastures in Union County. Controls recommended. (Ruff). NORTH CAROLINA - Damaged golf courses, pastures, and lawns in 3 Piedmont counties. Damage heavy to elementary school lawns in Davidson County. First reports of pure fall armyworm populations on grass this season. Rye seeding underway in many areas. (Hunt). WEST VIRGINIA - Larval damage complete on 10 acres of fescue hay and moderate on 7 acres of pasture in Wood County. (Hacker).

A NOCTUID MOTH (Mocis latipes) - FLORIDA - Principal species in complex of noctuid larvae. Larvae averaged 6-9 per square foot on 20-acre pasture of Coastal bermudagrass, near Newberry, Alachua County. Others include FALL ARMYWORM (Spodoptera frugiperda) and BEET ARMYWORM (S. exigua); ratio of M. latipes over these, 3:2. These species widespread in western Alachua County pastures; controls applied. (FL Coop. Sur.).

A SOD WEBWORM (Pediasia trisectus) - MARYLAND - Economic, 2-15 per square foot, in 200 acres of commercial bluegrass sod in Queen Annes County; treated but 40 acres total loss. (U. Md., Ent. Dept.).

A SCARAB (Ataenius spretulus) - ILLINOIS - Larvae, pupae, and adults present, and larvae feeding upon roots of annual bluegrass and bentgrass on golf courses in Champaign and Macon Counties. Adults emerging from golf course greens in St. Clair County at 30 per square foot. (IL Pest Sur.). OHIO - Population 97 percent larvae, 2 percent pupae and one percent adults in Hamilton County golf course, averaged 138 insects per square foot. Second summer generation adults emerged. (Wegner).

A SPIDER MITE (Oligonychus stickneyi) - NEW MEXICO - Damage significant in bermudagrass on State university campus, Dona Ana County, August 19. Taken once before from same area. (NM Coop. Rpt.).

FORAGE LEGUMES

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Heavy on alfalfa in Dickens, Fisher, Motley, and Wilbarger Counties. Light to moderate in Reeves County. (Neeb, Boring). KANSAS - Problem infestations on alfalfa in southeast area subsiding; some treatments applied. Larvae averaged 20 per square foot on 9-inch alfalfa in Douglas County August 30; treated. (Bell).

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) - MASSACHUSETTS - Counts of adults (and eggs) per sweep of alfalfa by county: Hampshire 2.9 (13.0) at Amherst; Franklin 16.0 (4.0) at Deerfield, 4.9 (3.8) at Sunderland, 23.8 (29.4 and 16.6) at Gill. (Andaloro).

PEA APHID (Acyrtosiphon pisum) - NEVADA - Ranged trace to 5 per sweep on hay alfalfa in Hualapai Valley, Washoe County. (Bechtel, Martinelli). UTAH - Major problem in Beaver County alfalfa. (Esplin). OHIO - Population in central alfalfa fields increased. Number of aphids per 100 sweeps ranged 170-1,440, averaged 810. (Lewis).

SOYBEANS

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Soybean damage moderate in some fields in Muskogee and McIntosh Counties. (OK Coop. Sur.). KANSAS - Problems on soybeans subsiding in southeast area; scattered damaging infestations in isolated cases in Montgomery and Crawford Counties. (Bell). SOUTH CAROLINA - Heavy, 1-3 per plant, fed on soybean leaves and new growth in Kershaw County. Controls recommended. (McIntosh).

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - FLORIDA - Increased rapidly on soybeans in Jackson County August 23-27. Larvae very small. Several fields treated. Averaged 100 per 3 linear feet of row in 17-acre field at Newberry, Alachua County. Currently infested 200 of 500 acres in western Alachua County; treatment required. (FL Coop. Sur.). GEORGIA - Heavy in some Grady County soybean fields week ending August 28. (Pope).

SOYBEAN LOOPER (Pseudoplusia includens) - SOUTH CAROLINA - Heavy infestations, moderate to heavy damage, in many soybean fields in Colleton and Hampton Counties. More than 6 per foot of row in some fields. Controls recommended, but not effective in some cases. (French).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Averaged 14.6 per 30 row feet of soybeans in 11 fields of 320 acres in Lancaster County. Defoliation averaged 5.1 percent. Averaged 127.5 per 30 row feet in 4 Northumberland County fields of 97 acres. Defoliation averaged about 24.5 percent. Treatment needed in one field. Populations lighter than usual in Isle of Wight County. (Allen).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - WISCONSIN - Light August 21-27 in most soybean fields, but up to 800 mites per

leaflet in parts of few fields. Twospotted spider mites 75+ per leaflet and many eggs on some plants in Sauk County field; predacious mites appeared to control pest. In most fields lack of water and a PIGWEED (Amaranthus sp.), a LAMBSQUARTER (Chenopodium sp.), VELVETLEAF (Abutilon theophrasti), a SMARTWEED (Polygonum sp.), and FOXTAILS (Setaria spp.) apparently caused greater problems. T. urticae currently increased in unirrigated corners of soybean fields in Central Sands. Mites 600 per leaflet in several fields with severe defoliation. Drought may have caused more leaf drop than mites. Heavily infested field in Winnebago County. Declined in heavily infested Iowa County field. (WI Pest Sur.).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Cotton square damage 50-90 percent in Baylor, Fisher, Haskell, Knox, Wichita, Wilbarger, and Young Counties. Square damage 30-50 percent in Dickens and Kent Counties. Population 8,000 or more per acre throughout Rolling Plains. Percent fields infested increased to 37 in Howard County. About 6 additional fields infested in central and northwest areas. Spotted and light to moderate in Glasscock and Reagan Counties. (Boring et al.). OKLAHOMA - Punctured all remaining squares in dryland cotton in Caddo, Washita, and Canadian Counties. Adults heavy in most fields and damaging small bolls. Punctured squares 2-3 percent in Harmon County. (OK Coop. Sur.). MISSISSIPPI - Light on cotton statewide. Average percent punctured squares by county: Tippah 5 in 2,700 acres; Alcorn 5 in 4 fields; Webster 8 in 3 fields; Prentiss 6 in 6 fields; Noxubee 2 in 2,000 acres. Controls effective. (Anderson). GEORGIA - Light to moderate on cotton in east and south counties week ending August 28. Adults trapped by county: Crisp 11, Turner 16, Tift 3. (Lambert). TENNESSEE - Third generation weevils heavy in rank late cotton. Bloom feeding very evident. Square counts ranged to 94-percent punctured squares. Migration to less infested fields underway. Heavy small boll damage in west area. Isolated showers led to infestations proportional to amount of rainfall. Most fields "cutting out" so heavier infestations in rank fruiting cotton. Control with ground equipment very difficult in most cases. (Locke).

BOLLWORMS (Heliothis spp.) - TEXAS - BOLLWORM (H. zea) damaged 5-10 percent of square and small bolls in Baylor, Kent, and Wichita Counties. Heavy square damage, 11-25 percent in Fisher, Jones, and Wichita Counties. Activity increased in Crosby County but eggs and larvae light. Heaviest counts of 10 eggs and 4 larvae per 100 plants in Crosby County. Eggs 2-109 per 100 plants in Hale County; 50+ percent of fields with 50+ eggs per 100 plants. Heaviest larval count in Hale County of 4 small larvae per 100 plants; larvae in 21 percent of fields. Percent fields in Howard County infested with eggs increased to 14, highest percent of eggs at 2. Adults decreased significantly in St. Lawrence area trap; eggs very few. Eggs 15-20 percent near Clint, El Paso, Hudspeth, Pecos, Reeves, Midland, Howard, Glasscock, Martin, and Reagan Counties. (Boring et al.). OKLAHOMA - H. zea light in most cotton in Washita, Caddo, and Canadian Counties. Heavy in Canadian County field. Terminal infestations 18-20 percent in Harmon County. TOBACCO BUDWORM (H. virescens) heavy in Caddo County

field. (OK Coop. Sur.). MISSISSIPPI - Heliothis spp. eggs from 0-10 percent on mature cotton up to 60 percent in terminals of green cotton. Larvae controlled in most areas, problems in delta area. Cotton rapidly "cutting out." (Anderson). TENNESSEE - Heliothis spp. continued problem on cotton in west area. Eggs and all larval stages found. Some infestations well above control level. Eggs and larvae still found well down in plants and in top terminals. Control very difficult. (Locke). NORTH CAROLINA - Threshold of 10 percent in some fields. H. zea laid eggs on all terminals in some fields but control excellent. (Hunt, Bachelor).

TOBACCO

INSECTS

GREEN PEACH APHID (Myzus persicae) - WISCONSIN - Still heavy in many Dane, Rock, and Vernon County tobacco fields in spite of chemical treatment and heavy population of lady beetle adults and larvae. (WI Pest Sur.).

SUGAR BEETS

DISEASES

POLYGONI POWDERY MILDEW (Erysiphe polygoni) - MINNESOTA - First report of season on sugar beets in Renville County. Some leaf loss, no significant yield loss expected. Treatment underway. (MN Pest Rpt.).

INSECTS

SUGARBEET ROOT MAGGOT (Tetanops myopaeformis) - MONTANA - Larvae severely mined field of diseased sugar beets at Terry, Prairie County. (Jensen).

MISCELLANEOUS FIELD CROPS

INSECTS

SUNFLOWER MOTH (Homoeosoma electellum) - TEXAS - In blooming sunflower fields in High Plains. Heavy in blooming fields in Hale County. (Morrison, Latham).

POTATOES, TOMATOES, PEPPERS

DISEASES

CAPSICI BLIGHT (Phytophthora capsici) - NEW MEXICO - Economic loss in chili peppers at Albuquerque, Bernalillo County, following recent rains. (NM Coop. Rpt.).

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Infestations in untreated mature sweet peppers averaged 18 percent in western Sussex County. Adults in blacklight traps greatly increased, averaged 50 per night in Sussex County. (Burbutis).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - NEW HAMPSHIRE - Damage moderate to severe in large potato field at Durham, Strafford County. Larvae 4-10 per plant. (Burger).

BEANS AND PEAS

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEW HAMPSHIRE - Increased on beans at Lee, Strafford County. Adults 5-25 per plant; feeding damage to leaves moderate. (Burger).

AN APHID (Smynthuroides betae) - NEW MEXICO - Collected from bean roots at Las Cruces, Dona Ana County, by T. Schuneman, July 22, 1976. Determined by M. Stoetzel. This is a new county record and second time taken in State. (NM Coop. Rpt.).

CUCURBITS

INSECTS

SQUASH VINE BORER (Melittia cucurbitae) - RHODE ISLAND - Damage on cucurbits peaked, heaviest counts in at least 3 years in Newport and Providence Counties. (Chaves, Relli).

CORRECTIONS

CPPR 1(35):567, 581 - FALL ARMYWORM (Spodoptera frugiperda) - KANSAS - Delete line for Kansas on page 567 and line for Tribune on page 581. (Bell).

DECIDUOUS FRUITS AND NUTS

INSECTS

CODLING MOTH (Laspeyresia pomonella) - UTAH - Larvae in cherries at South Salt Lake, Salt Lake County. (Roberts, Davis). Adults still coming to pheromone traps at north Logan, Cache County. (Davis).

PEARSLUG (Caliroa cerasi) - RHODE ISLAND - Heavy on hawthorn and prunus species in home landscapes in Providence County. (Relli).

WALNUT CATERPILLAR (Datana integerrima) - TEXAS - Defoliation moderate to heavy on pecan trees in Pecos and Upton Counties. (Neeb). SOUTH CAROLINA - Heavy in pecan orchard in Darlington County. (Pollet).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Bait traps in walnut orchards at Dundee, Yamhill County, indicate second peak emergence August 30-31. Some second sprays applied. Daily counts varied with higher than normal temperatures. (Larson).

YELLOW PECAN APHIDS (Monellia spp.) - TEXAS - Increased on pecans in El Paso, Upton, Pecos, Reeves, Brewster, and Jeff Davis Counties. Ranged 0-150 per compound leaf. (Neeb).

ORNAMENTALS

INSECTS

A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) - ILLINOIS - Collected feeding on shrubs and flowers around residence at Murphysboro, Jackson County, by R.W. Frank, July 23, 1976. Determined by J. Bouseman; confirmed by D.R. Whitehead. This is a new State record. (IL Pest Sur.).

A WEEVIL (Scyphophorus acupunctatus) - FLORIDA - Larvae and adults light on 9 Sansevieria laurenti (congo snake sansevieria) plants at nursery in Holly Hill, Volusia County. Collected by J.N. Pott, August 30, 1976. This is a new host record for State. (FL Coop. Sur.).

FOREST AND SHADE TREES

INSECTS

REDHEADED PINE SAWFLY (Neodiprion lecontei) - WEST VIRGINIA - Larvae heavily damaged several Virginia pine trees in Greenbrier and Summers Counties. (Hacker).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Large increase of adults on multilure traps at Salem, Marion County, Portland, Multnomah County, and Eugene, Lane County, last week of August, indicated second generation in flight. (Penrose).

ELM LEAF BEETLE (Pyrrhalta luteola) - TEXAS - Heavy activity on Siberian elms in Jeff Davis, Brewster, Upton, Pecos, Reeves, and Ward Counties. Siberian elms damaged in Wichita County. (Neeb, Boring).

FALL WEBWORM (Hyphantria cunea) - OHIO - Web on baldcypress tree in Wayne County with 0.5-inch-long larvae. Unusual host record. (Purrington). PENNSYLVANIA - Webs 2-5 per wild cherry tree in Wayne County along Delaware River. Up to 7 per wild cherry tree in Lackawanna County near Datton and Waverly. (Sporer).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - TEXAS - Moderate to heavy on cattle in Upton, Winkler, Jeff Davis, Brewster, Pecos, and Terrell Counties. Moderate in Wichita County. (Neeb, Boring). OKLAHOMA - Moderate to heavy on cattle in Mayes and Muskogee Counties. (OK Coop. Sur.). FLORIDA - Adults averaged 288 per animal on 10 cows in untreated beef herd near Gainesville, Alachua County, August 26. Averaged 828 per animal on treated herd. Adults currently averaged 140-200 per head on small untreated beef herd; 900 per head in large herd at Gainesville, Alachua County. (FL Coop. Sur.). INDIANA - Adults 5-150 (averaged 36) per side on 10 pastured cattle in Tippecanoe County. (Meyer). NEW HAMPSHIRE - Averaged 10 per animal on dairy cattle at Durham, Strafford County. (Burger).

MOSQUITOES - MASSACHUSETTS - Floodwater species, mainly Aedes vexans, heavy in Middlesex County. A. triseriatus from standing water very common. Many larvae present and will emerge shortly. (Armstrong). A. vexans moderate to heavy near salt marshes on north shore at Salisbury, Essex County. A. sollicitans fewer than in previous years. (Dobson). Culiseta melanura adults in Plymouth County suppressed by cool to cold evenings. Single recovery of encephalomyelitis virus from C. melanura mosquitoes showed mixture of eastern and western virus strains. Season too advanced for viral presence to be alarming. (Maxfield). NEW HAMPSHIRE - Aedes spp. still locally heavy throughout southeast area. A. sollicitans, A. vexans, and Anopheles punctipennis most common biters at Durham, Dover, and Lee, Strafford County. Female landing/biting rates averaged 2-10 per 3 minutes at dusk (Burger).

FEDERAL AND STATE PROGRAMS

INSECTS

CEREAL LEAF BEETLE (Oulema melanopus) - MARYLAND - Collected on oats by W.R. Allen near St. Martins, Worcester County, and near Princess Anne, Somerset County, May 20, 1976; near Vienna, Dorchester County, May 25. Collected on wheat near junction of State Route 50 and Old Railroad Road in Wicomico County by B. Davis, May 18. All determined by E.J. Ford. NEW YORK - Collections on oats by county: Washington at Greenwich June 18, 1976, and Warren at Queensbury June 23 by R.G. Spaide; Ulster at Shawangunk, Orange at Montgomery June 18, and Dutchess at east Fishkill June 24 by M. Brinkerhoff; Franklin in Brighton Township June 28 and Clinton at Ausable July 2 by M. Hildreth; Essex at Ticonderoga by H. Peters and M. Hildreth June 24; St. Lawrence at Morristown by H.R. Rockwell June 28. All determined by R.B. Gaines. All new county records in both States. (PPQ)

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Male flight increased at Porterville, Tulare County, averaged 31.97 per trap. Indicate third generation underway. Confirmed male catches at Fresno of one, one, and 2 and at Modesto of one, 15, and 3. (CA Pest Rpt.).

GRASSHOPPERS - UTAH - Grasshoppers caused problems in scattered range localities in Millard County. (Knowlton). Sprays applied to 20,000 acres in Iron and Kane Counties. (Esplin). KANSAS - Melanoplus femurrubrum and M. differentialis moderate to heavy along some field borders in Miami, Johnson, Leavenworth, and Atchison Counties; some leaf feeding on corn and sorghum heads, particularly in border rows. (Bell).

GYPSY MOTH (Lymantria dispar) - SOUTH CAROLINA - One adult male trapped on campground at Summerton, Clarendon County, by J.T. Squires, July 28, 1976. Determined by R.F. Bollinger. OHIO - One adult male each trapped in cemetery at Berlin Heights, Erie County, July 22 by H.A. Schutte; near campgrounds at Clay, Montgomery County, July 23 by D. Brandenburg; and in Monroe Township, Richland County, July 28 by M. Clapper. All determined by E.L. Todd. WISCONSIN - One adult male trapped at Blooming Grove, Dane County, in oak tree at residence by N. Nack, August 23 and in woodlot at Appleton, Calumet County, July 30 by R.T. Jakubek. Determined by E.L. Todd. All are first finds in counties. (PPQ).

JAPANESE BEETLE (Popillia japonica) - MARYLAND - Second-instar larvae infested 150 acres of commercial sod at Berlin, Worcester County; pretreatment counts of 6-13 per square foot. (U. Md., Ent. Dept.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Three confirmed nonsterile adults taken from Kern County. Total of 7 taken to date. (CA Pest Rpt.). TEXAS - Decreased, 0-1 taken in El Paso Valley. Light in Pecos, Reeves, Hudspeth, and El Paso Counties. (Burgess, Neeb).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Pupation underway in Lincoln, Chaves, Union, and Colfax Counties. (NM Coop. Rpt.).

SCREWWORM (Cochliomyia hominivorax) - Total of 1,382 cases reported from continental U.S. August 15-21 as follows: Oklahoma 4, Texas 1,369, New Mexico 3, Arizona 6. Total of 470 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 524 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 159,040,500 as follows: Oklahoma 2,701,800; Texas 130,463,700; New Mexico 6,975,000; Arizona 18,540,000. Total of 4,882,500 sterile flies released within Barrier of Mexico. (Vet. Serv.).

HAWAII PEST REPORT

Detection - BRISTLY ROSESLUG (Cladius difformis) larvae light August 25 in yard rose planting at 1,100-foot elevation at Kaumana, Hawaii Island. One larva per plant in 10-foot-long planting. No infestations on other rose plants nearby, at lower elevations closer to Hilo, at Mountain View, or at Holualoa, Hawaii Island. Larvae 50-100 per plant with 90 percent defoliation on two 3-foot-high shrubs at 4,000-foot elevation at Volcano, Hawaii Island. Previously reported only at Volcano. (Yoshioka, L. Nakahara).

General Vegetables - LEAFMINER FLIES (Liriomyza spp.) moderate to heavy, 50-90 percent of leaves heavily mined, and damage moderate on acre of yardlong beans at Kahaluu, Oahu, and on 0.25 acre pole beans at Kainaliu, Hawaii Island. (Kahale et al.). CARMINE SPIDER MITE (Tetranychus cinnabarinus) counts and damage moderate on 0.25 acre pole beans at Kainaliu. MELON FLY (Dacus cucurbitae) adults active on 0.5 acre cucumbers at Kealakekua, Hawaii Island. Yield loss in spite of trapping and spraying estimated at 5 percent. (Wong, L. Nakahara).

Ornamentals - BROAD MITE (Polyphagotarsonemus latus) colonized all terminals on 9 acres of regularly sprayed plumeria at Honaunau, Hawaii Island. Damage to newer leaves light but most older leaves malformed. (Wong, L. Nakahara). An ARMORED SCALE (Parlatoria proteus) moderate to heavy, 50-100 per leaf, on 40-50 percent of leaves on 150+ hybrid Vanda sp. plants at Kohala, Hawaii Island. (Mau).

DETECTION

NEW STATE RECORD

INSECTS

A JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) - ILLINOIS - Jackson County. (p. 595).

NEW COUNTY RECORDS

INSECTS

AN APHID (Smynthuroides betae) - NEW MEXICO - Dona Ana (p. 594).

CEREAL LEAF BEETLE (Oulema melanopus) - MARYLAND - Worcester, Somerset, Dorchester, Wicomico; NEW YORK - Washington, Warren, Ulster, Orange, Dutchess, Franklin, Clinton, Essex, and St. Lawrence. (p. 596).

LIGHT TRAP COLLECTIONS

[illegible]

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
adult	in hold of military aircraft	Dover	Germany	USA
larval	in oranges from passenger baggage	Brownsville	Mexico	FL
adult	in wood crates containing chain	Savannah	Japan	USA
larval	in peppers from passenger baggage	Dulles Airport	Gabon	VA
all	with 6 fern plants	San Francisco	Philippines	CA
larval	in flower bud galls from passenger baggage	Los Angeles	Guatemala	CA
adult	in wood with wire cable	San Juan	Spain	PR
juvenile	on container of military cargo	Norfolk	Greece	VA

Amphimallon solstitialis Linne
summer chafer

Anastrepha ludens (Loew)
Mexican fruit fly

Chryphalus sp.
a scolytid beetle

Cryptophlebia leucotreta (Meyrick)
false codling moth

Nasutitermes sp.
a termite

Schizomyia sp.
a cecidomyiid fly

Sirex noctilio Fabricius
a siricid wasp

Theba pisana (Müller)
white garden snail

UNITED STATES DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service
Hyattsville, Maryland 20782

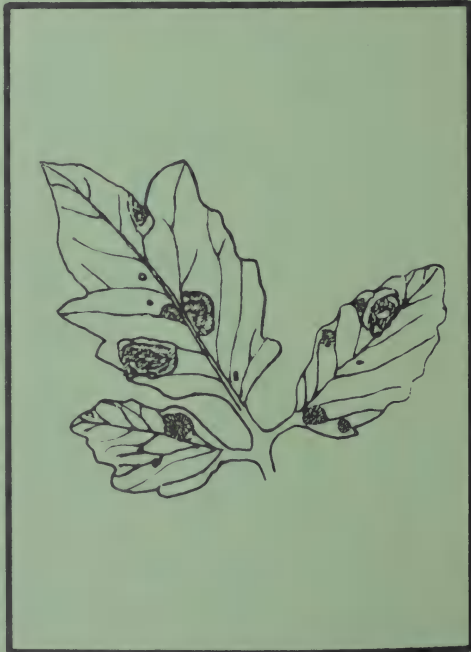
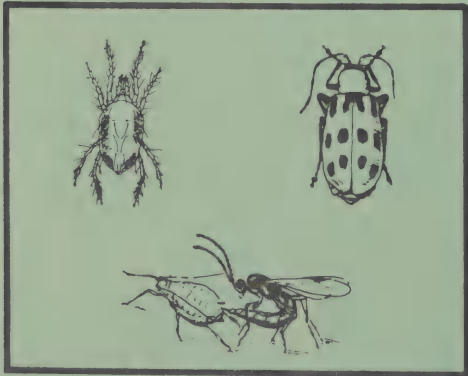
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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

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Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
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COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM, a problem on soybeans. Up to one per row foot in central and south Alabama. Damage heaviest in many years in North Carolina. Larvae in Virginia much heavier than in 1975. Injury noticeable in Delaware. (p. 603).

Treatment for FALL ARMYWORM required on sorghum in north Florida. Damage to sorghum and corn continued in parts of North Carolina. (p. 604). Very heavy in lawns in south-central Texas. Damaged grass in southwest Alabama, various crops in Georgia, and grass in west Tennessee. (p. 605).

Detection

● A SCOLYTID BEETLE in New York is a new North American record. (p. 610).

For new county records, see page 613.

Reports in this issue are for the week ending September 10 unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

DISEASES

CURLY TOP VIRUS - NEW MEXICO - Losses, particularly in commercial tomatoes in Dona Ana County. (NM Coop. Rpt.).

INSECTS

ARMYWORM (*Pseudaletia unipuncta*) - NORTH CAROLINA - Infestations continued in pastures and lawns in northern Piedmont. Larvae 15 per square foot of soil in fescue pasture in Granville County. Damaged golf courses and lawns in area. (Gantt, Hunt). MARYLAND - Pupae 2 per square foot in commercial sod at Berlin, Worcester County. (U. Md., Ent. Dept.).

CORN EARWORM (*Heliothis zea*) - TEXAS - Heavy in fall sweet corn in south-central area. (Cole). OKLAHOMA - Counts per 10 sweeps by county: East-central counties decreased slightly on soybeans; Garvin and Grady light on soybeans; Garvin averaged 30 on alfalfa; Logan, Kingfisher, Grady, Caddo, and Major up to 5 on alfalfa. (OK Coop. Sur.). ALABAMA - Developing populations very light to one per foot of row on soybeans in central and south areas. One 30-acre Lee County field had one per 6 square feet in broad-cast beans and one per 100 feet in another 20-acre field. (McQueen).

NORTH CAROLINA - Corn earworm defoliation and pod damage in 20-30 percent of 30 open-canopy soybean fields in Johnston, Wilson, Pitt, Greene, Edgecombe, Sampson, Bladen, Cumberland, Harnett, Wayne, and Lenoir Counties. Defoliation and pod loss 80 percent where untreated. Heaviest damage in recent years. Pupation general, problem over in most fields. (Hunt). VIRGINIA - Larval averages per 30 row feet of soybeans by county: Northumberland 11 in 2 fields of 78 acres, Lancaster 10.2 in 4 fields of 108 acres, Richmond 5 in 21 fields of 647 acres. Damage in most coastal counties severe but spotty. Larvae about 2-5 times heavier than in 1975, confirming predictions made a month earlier. Estimated acreage sprayed by area: Virginia Beach 10,000 acres, Surry County 3,000-5,000 acres, and Middlesex County 2,000 acres. (Allen). MARYLAND - Up to 30 early instars per 60 row feet of lima beans with many fields sprayed in Caroline County. Blacklight trap catches decreased to 5-52 per night statewide due to full moon. (U. Md., Ent. Dept.). DELAWARE - Common on late-planted soybeans in Sussex County with noticeable feeding injury to immature pods by young larvae. (Burbutis, Kelsey).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - UTAH - Much more damaging than *Acyrtosiphon pisum* (pea aphid) in many alfalfa fields at Delta, Deseret, Sutherland, and Abraham, Millard County. (Pehrson, Davis). OKLAHOMA - Averages per 10 sweeps of alfalfa by county: Caddo 170, Garvin 30, Major 15, Grady 15, Logan 20, and Kingfisher 25. (OK Coop. Sur.). ARKANSAS - Light, fewer than 100 per 100 sweeps of alfalfa on farm near Fayetteville, Washington County. First infestation in State in 2-3 years, probably due to very dry weather. (Boyer).

CORN, SORGHUM, SUGARCANE

DISEASES

MAIZE DWARF MOSAIC VIRUS - KANSAS - Percent of sorghum plants infected in fields surveyed by county: Riley 5 percent, most infected plants with red leaf symptoms; Dickinson trace; and Morris trace. (Sim). NEW YORK - Evident in most late-planted Monroe County market corn. Several fields not yet in tassel stage looking very poor. (Motsenbocker).

INSECTS

CORN ROOTWORMS (*Diabrotica* spp.) - VIRGINIA - NORTHERN CORN ROOTWORM (*D. longicornis*) adults very heavy on goldenrod at Burkes Garden, Tazewell County, indicating populations building up in that area. (Allen). PENNSYLVANIA - *D. longicornis* adults per 20 corn plants by county: Butler one, Clinton 4, Erie 4, Franklin 70, and Northumberland 2. (Proseus et al.). ILLINOIS - WESTERN CORN ROOTWORM (*D. virgifera*) collected from corn by K. Black near Bloomfield in Edgar County, August 30, 1976; and near Breese in Clinton County, September 2. Determined by J. Bouseman. These are new county records. (IL Pest Sur.). WISCONSIN - *D. longicornis* and *D. virgifera* averaged 6 per plant in Dodge County sweet corn field. Averages much lighter in surrounding counties. Adults in many alfalfa fields in central and south-central areas. (WI Pest Sur.). MINNESOTA - Adult averages per acre by district: Southeast 46,521; south-central 54,317; southwest 69,367; west-central 46,098; central 22,335; and east-central 21,547. Percent of *D. longicornis* to *D. virgifera* by district: Southeast 30:70, south-central 56:44, southwest 34:66, west-central 42:58, central 51:49, and east-central 29:71. (Sreenivasam). UTAH - *D. virgifera* serious problem in gardens and some corn fields in Salt Lake County. (Hassell).

FALL ARMYWORM (*Spodoptera frugiperda*) - FLORIDA - Treatment required on 200 of 300 acres of young sorghum in Levy, Alachua, and western Marion Counties. (FL Coop. Sur.). OKLAHOMA - Still light to moderate on sorghum checked in Blaine, Canadian, and Garvin Counties. (OK Coop. Sur.). NORTH CAROLINA - Damage continued in whorls of late-planted sorghum and corn. Infested 25 percent of plants in fields scattered over Piedmont and Coastal Plain. (Nolley et al.). MICHIGAN - Recently identified. Feeding on sweet corn in Monroe County. Not normally pest of sweet corn. (Cress).

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - FLORIDA - Treatment required on 50 of 300 acres of young sorghum in Levy, Alachua, and western Marion Counties. (FL Coop. Sur.). NORTH CAROLINA - Damaged 25 percent of plants in 2 Cleveland County sorghum fields. Scattered reports from Piedmont and Coastal Plain in gardens, commercial vegetables, and late-planted soybeans. (Spencer, Van Duyn).

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - RHODE ISLAND - Problems persisting at moderate level on sweet corn in gardens in Kent County. (Larmie). NEW HAMPSHIRE - Scattered small larvae represented partial second generation in field corn at Concord, Merrimack County. (Burger). OHIO - Adults decreased sharply in Wayne County blacklight trap. Light on corn in southwest counties. Larvae per 100 plants (and average percent plants infested) by county: Warren 28 (16), Clinton 4 (2), Brown 4 (2.7), and

Fayette 4 (4). (Lewis). MICHIGAN - European corn borer adults appear to have peaked. Eggs should be hatching. Will be present until frost. (Cress). PENNSYLVANIA - Larvae more active. Summer adults finished egg laying. Larvae per 20 cornstalks by county: Butler one, Franklin 4, Montour 3, Northumberland 2. (Garra et al.).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Heavy in blooming sorghum in Hale County, 2+ per head in all fields. (Latham). OKLAHOMA - Adults 1-3 per head in field of forage sorghum in Caddo County. Still light in scattered grain sorghum in Caddo and Washita Counties. (OK Coop. Sur.).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Very heavy in bermudagrass and St. Augustinegrass lawns in south-central area. (Cole). OKLAHOMA - New larval generation damaged lawns and pastures in Bryan County. Damage by large larvae continued in lawns in some areas of Washita County. (OK Coop. Sur.). ALABAMA - Larvae damaged several miles of bermudagrass recently seeded along U.S. Highway 43 north of Grove Hill, Clarke County. Controls effective, but adults laying eggs again. (Mitchell). GEORGIA - Damaged bermudagrass pasture and late-planted corn and sorghum statewide week ending September 4. (Suber). TENNESSEE - Light to moderate counts continued to damage bermudagrass in several locations in west area. (Gordon). WEST VIRGINIA - Larvae caused 90 percent yield loss to 12 acres of fescue pastures in Pleasants County. (Jacker).

AN ARCTIID MOTH (Arachnis zuni) - NEW MEXICO - Larvae collected from several rangeland areas where many fed on Atriplex (saltbushes), Sphaeralcea (globemallows), Eurotia (winterfats), and several lesser forbes in Lincoln, Sierra, Santa Fe, and Socorro Counties. Infested up to 500 acres at several sites. (NM Coop. Rpt.).

A SCARAB (Ataenius spretulus) - WEST VIRGINIA - Averaged 21 larvae, 6 pupae, and 3 adults per square foot on golf course fairways in Putnam County. (Hacker).

FORAGE LEGUMES

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Averages per 10 sweeps of alfalfa by county: Garvin 170; Grady 22; Caddo 6; Logan, Kingfisher, and Major absent or very light. (OK Coop. Sur.).

ILLINOIS - Many fall armyworm larvae virtually destroyed mature alfalfa near Breese in Clinton County. (IL Pest Sur.).

ALFALFA WEEVIL (Hypera postica) - NEW MEXICO - Up to 70 larvae per 25 sweeps of forage near McIntosh, Torrance County. Damage moderate to very heavy in most fields. (NM Coop. Rpt.).

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) - MARYLAND - One blotch per 2 square feet in 3 acres of alfalfa in Carroll County. (U. Md., Ent. Dept.). PENNSYLVANIA - Adults per sweep (and percent damage) of alfalfa by county: Adams 0.2 (trace), Lancaster 1.2 (15), York 0.5 (trace), Wayne 1.4, 6-8 (1-4 mines per stem). (Snelbaker, Sporer). MASSACHUSETTS - Adult averages per sweep (and eggs per tiller) in Franklin County by city: Deerfield 8.5 (4.6), Sunderland 2.3 (1.8), Northfield 5.2 (1.6), and Gill 14.3 (22.6 and 22.8). (Andaloro). NEW HAMPSHIRE - Feeding damage light in alfalfa fields at Concord, Merrimack County. Most mines empty. Recent cool weather apparently killed some full-grown larvae. (Burger).

LYGUS BUGS (Lygus spp.) - UTAH - Very numerous in seed alfalfa field at Delta, Millard County, within 3 weeks of harvest. (Pehrson, Davis).

PEA APHID (Acyrtosiphon pisum) - UTAH - Currently most serious alfalfa pest in Salt Lake County. (Hassell).

SOYBEANS

DISEASES

CHARCOAL ROT (Macrophomina phaseolina) - KANSAS - Affected 40 percent of soybean plants in Riley County field. (Sim).

FROGEYE LEAF SPOT (Cercospora soja) - FLORIDA - On soybeans week ending September 3. Increased to moderate levels. (FL Coop. Sur.).

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - TENNESSEE - Heavy in spots in several soybean fields in Franklin and Lincoln Counties. General treatment of total field not needed. (Cagle). VIRGINIA - Adult averages per 30 row feet of soybeans (and percent of defoliation) by county: Lancaster 26 (7.8) in 4 fields of 108 acres, Northumberland 22 (14.8) in 2 fields of 38 acres, Richmond 13.5 adults and larvae (4.3) in 21 fields of 647 acres. About 8,000 acres sprayed in Virginia Beach. Lighter and later than normal in Surry and Middlesex Counties. (Allen). MARYLAND - Defoliated 20 percent of soybeans in Talbot and Kent Counties. (U. Md., Ent. Dept.).

SOYBEAN LOOPER (Pseudoplusia includens) - MISSISSIPPI - Heavy counts and soybean foliar damage in Yazoo County. Controls applied. Disease killed many larvae. Cool, wet conditions ideal for fungal insect diseases. (Jarratt). SOUTH CAROLINA - Moderate to heavy in several soybean fields in Sumter County, about 17 acres. Ranged 6-26.5 per foot of row. Damage light to moderate. Controls recommended. (French).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - FLORIDA - Controls applied to 400 out of 500 acres of soybeans in western Alachua County. Counts increased rapidly in Jackson County, 464 of 1,200 scouted acres treated. (FL Coop. Sur.).

BEE T ARMYWORM (Spodoptera exigua) - MISSISSIPPI - Moderate to heavy on soybeans in Sunflower and Leflore Counties. Controls underway. (Jarratt).

PEANUTS

INSECTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - FLORIDA - Counts increased; 259 of 1,218 acres of peanuts treated in Jackson County. (FL Coop. Sur.). ALABAMA - Larvae damaged peanuts in many Covington County fields. Larvae 1-2 per 16 inches at 7 sites in 19-acre field, up to 10 in one 16-inch site. (Pike). OKLAHOMA - Infested up to 26 percent of peanut plants in Marshall County. (OK Coop. Sur.).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - FLORIDA - Controls applied to 900 of 1,300 peanut acres treated in Levy and Alachua Counties. Counts increased in Jackson County; 279 of 1,218 scouted acres treated. (FL Coop. Sur.).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Decreased on cotton in south-central area. (Cole). OKLAHOMA - Still heavy on cotton still blooming in Washita and Caddo Counties. Migrating from fields that have "cut out." (OK Coop. Sur.). TENNESSEE - Rains in cotton areas made conditions ideal for emergence of third-generation weevils. Migration to late cotton continues. Small boll damage very evident in west area. Punctured almost all squares in late rank cotton in southwest area. Control very difficult due to migrating weevils. Square counts not feasible at this time. (Locke). Punctured 7-22 (averaged 15) percent of squares in Franklin and Lincoln Counties. (Cagle).

BOLLWORMS (Heliothis spp.) - TEXAS - BOLLWORM (Heliothis zea) eggs increased but few hatched on cotton in south-central area. Increased over most of Crosby County; few fields reached 5 percent infestation but many fields at 3-4 percent. Egg laying decreased in Hale County, maximum egg counts of 20 eggs per 100 plants. Over 100 larvae per 100 plants in untreated Hale County fields. Average egg counts 6-7 percent in El Paso Valley. Some areas in Acala and west of Clint with egg counts of 10-12 percent. Larvae light in most fields in El Paso Valley, averaging 4-5 percent. Isolated fields in Acala and Socorro areas with 13-18 percent larvae. (Cole et al.). MISSISSIPPI - Mature cotton becoming unattractive to Heliothis spp. adults. Eggs heavy on green cotton in delta and hill section fields. Larvae increased, but controls effective. Average percent of larvae by county: Montgomery 4 in 11 fields, Webster 12 in 3 fields, Leake 15 in 10 fields, Tunica 6 in 300 acres, Lowndes 5 in 1,500 acres, Noxubee 2 in 2,000 acres. (Anderson). TENNESSEE - Heliothis spp.

eggs and all larval stages still found in all cotton fields in west area. Many infestations above control levels, especially in rank fruiting fields. (Locke). Bollworm eggs 0-2 per 100 terminals in Franklin and Lincoln Counties. (Cagle).

BANDEDWING WHITEFLY (Trialeurodes abutilonea) - ARKANSAS - Increased rapidly on irrigated cotton in southeast area. (Boyer). TENNESSEE - Below control levels but appeared to increase on rank cotton. (Locke).

MISCELLANEOUS FIELD CROPS

INSECTS

SUNFLOWER MOTH (Homoeosoma electellum) - TEXAS - Economic in many blooming sunflower fields in High Plains. (Latham).

POTATOES, TOMATOES, PEPPERS

DISEASES

SOLANI ROOT AND STEM ROT (Rhizoctonia solani) - NEW MEXICO - This disease with VERTICILLIUM WILT (Verticillium albo-atrum) resulted in girdling and economic loss to chili peppers at Espanola, Santa Fe County. (NM Coop. Rpt.).

INSECTS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - RHODE ISLAND - Adults still troublesome on potatoes in gardens and commercial fields in Washington County. (Partyka).

BEANS AND PEAS

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MARYLAND - Defoliated 5-10 percent of mature lima bean fields in Kent and Queen Annes Counties. (U. Md., Ent. Dept.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - MARYLAND - Heavy in isolated areas of 100-acre snap bean field in St. Marys County. (U. Md., Ent. Dept.).

GREEN CLOVERWORM (Plathypena scabra) - MARYLAND - Increased to 5-10 per row foot in 50 percent of lima bean fields surveyed on Eastern Shore; disease present in most populations. (U. Md., Ent. Dept.).

DECIDUOUS FRUITS AND NUTS

INSECTS

CODLING MOTH (Laspeyresia pomonella) - UTAH - Generally heavy in Salt Lake County home apple and pear orchards. (Hassell). Larvae infested some cherries in orchard at Orem, Utah County. (Roberts, Davis).

APPLE MAGGOT (Rhagoletis pomonella) - MICHIGAN - Traps in abandoned blocks of later-maturing apple varieties still catching significant adult numbers. Rain past few days may cause unusually late season emergence. (Brunner).

APPLE RUST MITE (Aculus schlechtendali) - OREGON - Infestations varied in apple root stock stool beds in Marion and Yamhill County nurseries past few weeks. Multiple treatments generally effective. (Long).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - First adults of season on pecan trees in Pottawatomie County. (OK Coop. Sur.).

SMALL FRUITS

INSECTS

YELLOWHEADED FIREWORM (Acleris minuta) - MASSACHUSETTS - Damage of cranberry vines began in Plymouth County. (Tomlinson).

ORNAMENTALS

DISEASES

JUNIPEROVORA TWIG BLIGHT (Phomopsis juniperovora) - RHODE ISLAND - Heavier than in 1975 on various juniper varieties in home landscapes and in commercial nurseries in Kent and Newport Counties. (Larmie, Brownell).

INSECTS

AZALEA CATERPILLAR (Datana major) - ALABAMA - Damaged many azaleas at residences in Covington, Geneva, Baldwin, and Houston Counties. (Johnson et al.).

FOREST AND SHADE TREES

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - MINNESOTA - Elm tree losses through August 15 by county: Anoka 1,835; Carver 192; Dakota 4,620; Hennepin 15,537; Ramsey 23,470; Scott 229; and Washington 4,687. (Sreenivasam). See this disease under Federal and State Programs.

INSECTS

WHITE PINE SAWFLY (Neodiprion pinetum) - WEST VIRGINIA - Larval damage moderate to heavy to Virginia pine saplings in Summers County. (Hacker).

A SCOLYTID BEETLE (Xyleborus validus Eichhoff) - NEW YORK - Five adults collected from infested grove of mature beech trees and possibly a young Norway maple tree in arboretum at Old Westbury, Nassau County, by J. Savage, May 1976. Determined by D. Bright. This is a new North American record. Other scolytid beetles, Xyloterinus politus and Monarthrum mali, were present. X. validus intercepted previously at ports of entry in the United States and Canada. This species is of Japanese origin according to collections reported in literature before the 20th century. Unknown whether a primary or secondary invader but nature of infestation raises possibility of primary invasion. Two European beech trees were heavily infested and subsequently taken down. Followup investigations of these infestations conducted. (Willson). X. validus has been reported in Burma, Korea, Sri Lanka, Sumatra in Indonesia, and Taiwan. Hosts in Japan are Abies, Pinus, Tsuga, Fagus, Prunus, and Quercus. (PPQ).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OKLAHOMA - Adults heavy on several dying Siberian elms at Roman Nose State Park, Blaine County. (OK Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Heavy damage at Albuquerque, Bernalillo County, and several small webs at Las Cruces, Dona Ana County, represent second-generation buildups on shade trees. More damage may be noticed as feeding progresses. (NM Coop. Rpt.). ALABAMA - Larvae feeding on many persimmon and blackgum trees in forested areas of Jefferson and Shelby Counties. (Strahan). NEW HAMPSHIRE - Larval development 3 weeks ahead of 1975 on trees. Larvae full grown and migrating, or nearly full grown throughout southeast area of State. (Burger).

ORANGESTRIPED OAKWORM (Anisota senatoria) - MARYLAND - Heavy on oak in isolated areas of Frederick and Allegany Counties; defoliation up to 100 percent on smaller trees. (U. Md., Ent. Dept.).

MIMOSA WEBWORM (Homadaula anisocentra) - PENNSYLVANIA - Following collections from honeylocust (Gleditsia triacanthos) were determined by T. Henry. All are new county records. Larvae near Muncy, Lycoming County, collected by R. Weidner and A. Wheeler, July 28, 1976. Larvae at Molino, Schuylkill County, by L.L. Signarovitz, August 12. Larvae and adults at Somerset, Somerset County, collected by T.E. Wolf, August 17. Larvae at Tipton, Blair County, collected by F.E. Dinsmore, September 1. (Shetlar, Henry).

A SAWFLY (Caliroa quercuscoccineae) - WEST VIRGINIA - Second-generation eggs and larvae still on leaves of pin and scarlet oak in Summers County; foliar damage extensive. (Hacker, Miller).

MAN AND ANIMALS

INSECTS

MOSQUITOES - MISSISSIPPI - Culex quinquefasciatus increased in Oktibbeha County due to recent rains. Rural populations increased, urban populations still light due to city fogging. (Bertsch).

NEW HAMPSHIRE - Aedes vexans adults still increased in forested areas throughout Durham, Strafford County; landing and/or biting rate of 5 females per minute in late afternoon. Most specimens seem freshly emerged. (Burger).

BROWN DOG TICK (Rhipicephalus sanguineus) - MARYLAND - Nymphs appearing in residences in Cecil County. (U. Md., Ent. Dept.).

FEDERAL AND STATE PROGRAMS

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - CALIFORNIA - New infected sites by county: Napa - infected trees about 2 miles from nearest dutch elm disease site at St. Helena, and at American Canyon near Solano County line; Sonoma - positive in Siberian elm on golf course. (CA Pest Rpt.). Also see Forest and Shade Trees.

INSECTS

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Visual survey completed at Poplar and Plainview, Tulare County. Surveys continued at Lindsay, Tulare County, and Wasco, Kern County. Pheromone trapping indicated slight increase in male flight at Porterville, Tulare County, males averaged 34.56 per trap. Additional traps placed at Woodlake and Visalia, Tulare County, Fresno, Fresno County, and Modesto, Stanislaus County, to help delimit confirmed finds. All 132 traps at Shafter, Kern County, negative. Of 86 commercial groves with traps in Tulare County, 18 had zero readings. Of 25 Kern County spots, five had zero readings after eight card checks. (CA Pest Rpt.).

JAPANESE BEETLE (Popillia japonica) - RHODE ISLAND - Very early larval damage to turf in central and south areas of Washington County. (Wallace).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - CALIFORNIA - Two sterile flies taken in adjacent Jackson traps, 3 months since last release. (CA Pest Rpt.).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Male annihilation crew completed 3.5 of 9 square miles involved in present eradication effort. Survey and detection negative for additional fruit flies. (CA Pest Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Despite end of sterile releases in Kings, Fresno, and Merced Counties, 2,345 moths recaptured as of August 20. No nonsterile confirmations for this period. (CA Pest Rpt.). TEXAS - Infestation zero to less than one percent in cotton bolls in El Paso Valley. (Burgess).

RED IMPORTED FIRE ANT (Solenopsis invicta) - TEXAS - Mounds averaged 32 per 1,000 square feet on some golf course fairways in south-central area. (Cole).

SCREWWORM (Cochliomyia hominivorax) - Total of 1,406 cases reported from continental U.S. August 22-28 as follows: Oklahoma 9, Texas, 1,391, New Mexico one, Arizona 5. Total of 435 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 545 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 137,596,200 as follows: Oklahoma 1,620,000, Texas 109,363,200, New Mexico 7,560,000, Arizona 18,909,000. Total of 3,303,000 sterile flies released within Barrier of Mexico. (Vet Serv.).

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - CALIFORNIA - First larval find on grape at Fresno, Fresno County, since eradication several years ago. (CA Pest Rpt.).

WHITEFRINGED BEETLES (Graphognathus spp.). - ALABAMA - Occasional adult collected at residence near Oneonta, Blount County. Many adults feeding in many fields in Covington, Houston, and Geneva Counties. (Pike et al.).

HAWAII PEST REPORT

General Vegetables - CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavy, 20+ per square inch, on 75-100 percent of leaves; foliar damage moderate on 1.5 acre of bell peppers and 0.25 acre of tomatoes at Waialua and on 5,000 square feet of eggplants at Poamoho, Oahu. Light to moderate, 1-5 per square inch, on 10-50 percent of leaves, on 5,000 square feet of eggplants at Waialua, one acre of tomatoes at Pupukea, 0.25 acre of Chinese peas at Poamoho, and 2 acres of pole beans at Waialua, Pupukea, Poamoho, and Wahiawa, Oahu. BROAD MITE (Polyphagotarsonemus latus) infestations and foliar damage (10-50 percent of terminals malformed) light to moderate on 2 acres of bell peppers at Waialua and Pupukea. Populations of PEPPER WEEVIL (Anthonomus eugenii) adults moderate, ranged from one to 4 per plant, on 25-50 percent of bell pepper plants observed at Waialua and Pupukea. Larvae and damage of MELON FLY (Dacus cucurbitae) heavy on acre of tomatoes at Pupukea. Infested more than 50 percent of unsprayed fruits. Adults light. LEAFMINER FLIES (Liriomyza spp.) moderate (30 percent of leaves heavily mined) on 1.25 acres of tomatoes at Pupukea and Waialua. (Chun, L. Nakahara).

Turf and Pasture - BLACK CUTWORM (Agrotis ipsilon) moderate, 1-5 per square foot, on 5.5 acres of common bermudagrass turf at Kaneohe, Oahu. Damage light to moderate. (Matayoshi, Teramoto).

DETECTION

NEW NORTH AMERICAN RECORD

INSECTS

A SCOLYTID BEETLE (Xyleborus validus Eichhoff) - NEW YORK - Nassau County. (p. 610).

NEW COUNTY RECORDS

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - FLORIDA - Adult female taken in blacklight trap in southwestern Hamilton County, near Ellaville July 30, 1976. Collected by P.W. Skeen. Determined by F.W. Mead. (FL Coop. Sur.).

MIMOSA WEBWORM (Homadaula anisocentra) - PENNSYLVANIA - Lycoming, Schuylkill, Somerset, Blair (p. 610).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Edgar, Clinton (p. 604).

WEATHER OF THE WEEK ENDING SEPTEMBER 12

Reprinted from Weekly Weather and Crop Bulletin supplied by the National Weather Service, NOAA.

HIGHLIGHTS: Hot, dry air plagued the northern Plains early in the week, while cool temperatures persisted in the northwestern and northeastern States. Although some rains fell over the parched northern Plains, they did not significantly relieve the drought situation. Tropical storm Kathleen moved into southern California Friday and inflicted heavy rains and high winds over much of the Southwest for the remainder of the weekend.

TEMPERATURE AND PRECIPITATION: Hot, dry air swept by brisk southerly winds plagued the already parched northern Plains, Monday. South Dakota reached record highs of 107 degrees in Pierre, 105 degrees in Philip, and 104 degrees in Sioux Falls. By contrast, cool temperatures in the 30's and 40's persisted in the Northwest, as a wet snow fell in the mountains (above 4,000 feet) of Washington. In addition, the northeastern United States continued to have cool weather with readings in the 60's and 70's throughout the day. Showers and thundershowers forced flash flood watches for portions of southern California mountains and deserts, Utah, southern Arizona, and the mountains and southwestern part of Colorado. Other thundershowers lingered over the southwestern Plains, and from the central Gulf States to the southern Atlantic coast. A sharp cold front, along with scattered thundershowers, pushed into portions of the Plains, Tuesday. Temperatures dropped more than 30 degrees. Pierre, South Dakota, fell from Monday's high of 107 degrees to only 74 degrees Tuesday, and Bismarck, North Dakota, from 101 degrees to 69 degrees. Ahead of the front, record highs covered portions of Minnesota.

Weather of the Week continued on page 616.

LIGHT TRAP COLLECTIONS

State	County	Locality	Date	Time of day	Temperature, °F.	Precipitation (inches)	Type of trap	Number of insects		Total	Number of species
								Blacklight	Other		
CALIFORNIA	Bellevue	Manteca 9/1	63-102	BL	60-96		BL	3	2	5	5
								2	1	3	3
								2	1	3	3
FLORIDA	Gainesville	9/3-9	63-87	2BL	1.44		2BL	1	1	2	2
								2	1	3	3
								2	1	3	3
MISSISSIPPI	Stonewall	9/3-9	63-87	2BL	1.44		2BL	1	1	2	2
								2	1	3	3
								2	1	3	3
MISSOURI	(County)	Piatte 9/4-10	63-87	BL			BL	1	1	2	2
								2	1	3	3
								2	1	3	3
NEW HAMPSHIRE	Lee	8/30	63-87	BL			BL	1	1	2	2
								2	1	3	3
								2	1	3	3
OHIO	Wooster	9/4-10	63-87	3BL			3BL	1	1	2	2
								2	1	3	3
								2	1	3	3
PENNSYLVANIA	(Districts)	Central 8/30-9/8	63-87	BL			BL	1	1	2	2
								2	1	3	3
								2	1	3	3
WEST VIRGINIA	(Counties)	Kanawha 9/7	63-87	BL			BL	1	1	2	2
								2	1	3	3
								2	1	3	3
WISCONSIN	Cedar Grove	8/31-9/6	63-87	BL			BL	1	1	2	2
								2	1	3	3
								2	1	3	3

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
		Hawaii	Republic of China	CA
		San Francisco	Thailand	CA
		Savannah	Portugal	USA
		Tampa	Belgium	FL
		San Francisco	Guam	CA
		Los Angeles	Japan	USA
		Savannah	Unknown	---

Guignardia citricarpa Kiely
citrus black spot

Xanthomonas citri (Hasse) Dowson
citrus canker

Ips sexdentatus (Boerner)
a scolytid beetle

Pyrrhidium sanguineum (Linnaeus)
a cerambycid beetle

Schedorhinotermes sp.
a termite

Taeniothrips eucharii (Whetzel)
a thrips

Trogoderma granarium Everts
Khapra beetle

Weather of the Week continued from page 613.

The front also brought welcome rains to the parched areas of the northern and central Plains. Showers and thundershowers reached from Minnesota and the eastern Dakotas, into eastern Colorado, and western Kansas. Aberdeen, South Dakota, received 0.76 inch of rain, which tops the total for any one day so far in 1976. However, the area remains over 8 inches below normal. Showers and thundershowers were scattered also from the lower Mississippi Valley, to the southern Atlantic coast, over parts of Texas, the southern Plateau region, and southern California. Just over 0.25 inch of rain fell at Ontario, California, and Yucca Flat, Nevada. Flash flood watches remained in effect for some of the mountain and desert areas of southern California. A cold front drifted slowly eastward across the midsection of the Nation to break the upper Midwest heat wave on Wednesday. Temperatures dipped to the low 50's and some below freezing over the Dakotas and into the 20's in Wyoming and Montana.

A narrow band of showers and some thundershowers extended from northeast Minnesota, through southwest Iowa and north-central Oklahoma, to southeast of the Texas Panhandle. In spite of local rainfall exceeding one inch in some parts of the Great Plains, the drought-stricken areas still require more prolonged rains. Unseasonably cool air gripped much of the Nation from the Mississippi Valley into the Rockies early Thursday. Record low temperatures dipped to just 28 degrees in Pocatello, Idaho, and 35 degrees in North Platte, Nebraska.

A band of showers and thundershowers, associated with a cold front, extended from the central Great Plains area into the lower Mississippi Valley and continued to move eastward. Showers and thundershowers also traversed the Gulf and southern Atlantic coasts. Tropical storm Kathleen, just off the Baja California peninsula, spread moisture northward and produced considerable cloudiness over the southwestern United States.

Cloud cover and rain held temperatures in the 50's and 60's over parts of New Mexico and western Texas. Clear and cool weather in the northern and central Rockies and upper Mississippi Valley kept temperatures in the 70's and upper 60's. The Pacific coast remained warm with a few readings over 100 degrees in the northern California interior. Mercuries reached the 80's and 90's elsewhere in California, in parts of the Pacific Northwest, along the Gulf and the middle and southern Atlantic coasts. Tropical storm Kathleen moved northward over Baja California, Friday, and spread rains over southern California, southern Nevada, Arizona, and southwest Utah. Rains caused flash flood watches over parts of the southwestern States. Las Vegas, Nevada, reported some streets flooded with more than 3 feet of water, while Laguna Mountain, California, received more than 9.5 inches of rain in a 24-hour period. Tropical storm Kathleen also produced high winds over southwestern Arizona (almost 75 m.p.h. at Yuma, Arizona) and southeastern California.

Although tropical storm Kathleen expended her major force over southwestern Nevada, she continued to drop showers and thundershowers over much of California, Nevada, Utah, southern Idaho, western Wyoming, and parts of Montana on Saturday. Other precipitation fell over southern Texas, southern Florida, and most of New England. The shower activity extended over the central and northern Plains on Sunday, but the extreme drought conditions received little relief.

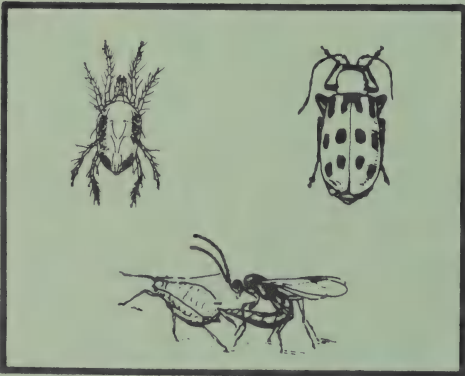
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Cooperative PLANT PEST REPORT



Animal
and Plant
Health
Inspection
Service

U.S.
DEPARTMENT
OF AGRICULTURE



This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

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Correspondence should be directed to:

CPPR

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Hyattsville, Maryland 20782

COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

FALL ARMYWORM heavy on sorghum, wheat (p. 620), and alfalfa in Oklahoma. Still heavy on bermudagrass pastures and lawns in Texas (p. 621) and Alabama. (p. 619).

Percentage of BACTERIAL PUSTULE, CHARCOAL ROT and SOYBEAN BROWN SPOT infection high in soybeans in some areas of Kansas. (p. 622).

BOLL WEEVIL still a problem on cotton in Texas, Oklahoma, and Tennessee. (p. 623).

Controls still needed for BOLLWORMS in New Mexico (p. 623) and Tennessee. (p. 624).

First county finds of GYPSY MOTH for Michigan, Minnesota, and Wisconsin. (p. 627).

ORIENTAL FRUIT FLY and MEXICAN FRUIT FLY males trapped in San Diego County, California. (p. 627).

Detection

For new county records, see page 630.

Reports in this issue are for the week ending September 17 unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ARMYWORM (Pseudaletia unipuncta) - TEXAS - Light feeding in sorghum heads in El Paso, Hudspeth, Pecos, and Reeves Counties. Adults heavy on home lawns in Pecos Valley area. (Neeb). KANSAS - Larvae trace in 14-inch alfalfa in Pottawatomie County, probably fed on grass in field. (Bell). ALABAMA - Adults of this species and FALL ARMYWORM (Spodoptera frugiperda), 2-20 per 100 square feet, emerged from pupation and laid eggs in 4 fields of Coastal bermudagrass in Greene and Sumter Counties. Larvae heavy and widespread in Marengo County pastures. Many growers with second heavy infestation. (Williamson et al.).

CORN EARWORM (Heliothis zea) - TEXAS - Light feeding in sorghum heads in El Paso, Hudspeth, Pecos, and Reeves Counties. (Neeb). OKLAHOMA - Ranged 0-1 per row foot on soybeans in Muskogee, Haskell, Sequoyah, Wagoner, Le Flore, and Ottawa Counties. Moderate in Craig County. (OK Coop. Sur.). ALABAMA - Adult flights and larvae increased in many soybean fields in Bullock and Russell Counties week ending September 3. Larvae 1-12 per 6 feet of row in 10 fields, averaged 2 per 60 feet in one Geneva County field. Infestations spotty and widely varied. (Stephenson et al.). GEORGIA - Severe outbreak on soybeans in Pike County week ending September 11. (Dupree). VIRGINIA - Larval averages per 30 row feet of soybeans by county: Richmond 2.9 in 18 fields (431 acres); Lancaster 3 in 5 fields (150 acres); Westmoreland 10.2 in 38 fields (764 acres). Treatment required in one field. Damage in most coastal counties still severe but spotty. Populations decreasing. (Allen). MARYLAND - Egg laying decreased statewide due to reduced temperatures and advanced condition of corn plants and snap beans. Larvae economic (25+ per 60 row feet) in some soybean fields in Wicomico and Dorchester Counties. (U. Md., Ent. Dept.).

CORN LEAF APHID (Rhopalosiphum maidis) - ALABAMA - Heavy in whorls of new-growth johnsongrass in all fields surveyed in Tuscaloosa, Greene, and Sumter Counties. Will move to rhizomes for overwintering. (Pitts et al.).

GREENBUG (Schizaphis graminum) - COLORADO - Few scattered on sorghum in Crowley County. (Capinera, Fronk). TEXAS - Light in isolated sorghum fields in Pecos, Reeves, Midland, Martin, Howard, Glasscock, El Paso, and Hudspeth Counties. Parasitism moderate to heavy in El Paso and Hudspeth Counties. (Neeb). OKLAHOMA - Mostly none but occasionally up to 20 per plant in some fields of young wheat in Texas County. (OK Coop. Sur.). KANSAS - Damaged early-planted wheat field in Harper County. Some late buildups on sorghum in Kiowa County. Possible source of infestation on wheat in fall. (Bell).

POTATO LEAFHOPPER (Empoasca fabae) - KENTUCKY - Adults 1.2 per 20 sweeps in Fayette County. (Yeargan). MARYLAND - Ranged 0.5-1.5 per sweep in Carroll and Baltimore Counties. (U. Md., Ent. Dept.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEVADA - Appeared in alfalfa fields at Orovalda, Humboldt County. (Lauderdale). KANSAS - Very light in alfalfa in Riley, Pottawatomie, Dickinson, and Saline Counties. (Bell).

CORN, SORGHUM, SUGARCANE

DISEASES

CHARCOAL ROT (Macrophomina phaseolina) - KANSAS - Affected 20 percent of corn plants in Seward County field. (Sim).

HOLCUS SPOT (Pseudomonas syringae) - MINNESOTA - Infection light to moderate on dent to harvest mature corn at Waseca, Waseca County. (MN Pest Rpt.).

COMMON MAIZE RUST (Puccinia sorghi) - KANSAS - Infected about 30 percent of corn plants in Woodson County field. (Sim).

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - WISCONSIN - Finding of pupae indicates at least partial second generation for Rusk County. (WI Pest Sur.). OHIO - Moderate on northeast area corn September 14-15. Ranged 6-60 percent plants infested. Averaged up to 168 larvae per 100 plants; maximum larvae 5 per plant. Percent infestation (and larvae per 100 plants) by county: Portage 36 (42), Geauga 12 (16), Stark 33 (87). (Lewis).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - OKLAHOMA - Cornstalks girdled in Texas County; few overwintering larvae found. Stalk infestations 85-100 percent in some fields. Ear and shank damage in some late maturing fields. (OK Coop. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Small larvae heavy in late sorghum in Lincoln County. (OK Coop. Sur.).

CORN ROOTWORMS (Diabrotica spp.) - UTAH - WESTERN CORN ROOTWORM (D. virgifera) adults heavy; control required in some Weber and Box Elder County commercial sweet corn fields. (Duncan). WISCONSIN - NORTHERN CORN ROOTWORM (D. longicornis) and D. virgifera adults heavy in many late corn fields statewide. (WI Pest Sur.).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Increased in most sorghum fields in El Paso, Hudspeth, Pecos, and Reeves Counties. (Neeb). OKLAHOMA - Heavy numbers found in late sorghum field in Caddo County. (OK Coop. Sur.).

POTATO APHID (Macrosiphum euphorbiae) - OKLAHOMA - Heavy on corn leaves in one field in Texas County. (OK Coop. Sur.).

SMALL GRAINS

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Heavy on planted wheat in Ringling area of Jefferson County and in Garvin County in fields following sudangrass or bermudagrass. (OK Coop. Sur.).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Damaged Coastal bermudagrass and home lawns in parts of McLennan, Somervell, Bosque, Hamilton, and Erath Counties. Heavy on Coastal bermudagrass pastures, lawns, and home gardens in Montgomery and Brazos Counties. (Hoelscher, Cole). OKLAHOMA - Small larvae up to 100 per square foot in bermudagrass pastures in Stephens County and 15-20 per square foot in Lincoln County. Heavy in pastures in Carter County and lawns and pastures in Pottawatomie County. (OK Coop. Sur.). GEORGIA - Light to heavy statewide on pasture and forage crops week ending September 11. Outbreak on lawns in Spalding and Pike Counties. (Suber, Dupree). TENNESSEE - Damaged 45 acres of hay, pastures, and lawns in Bradley County. Controls applied to 20 acres. (Hale).

A NOCTUID MOTH (Mocis latipes) - FLORIDA - Becoming heavy as usual in late summer. Economic threshold exceeded in parts of pangolagrass hay field on ranch near Crystal River, Citrus County; larvae 1-2 per square foot in thin portions of field. At least 37 acres treated. (FL Coop. Sur.).

AN ARCTIID MOTH (Arachnis zuni) - NEW MEXICO - Larvae still on rangeland, feeding in large numbers on winter forbes. Also taken in Torrance County. (NM Coop. Rpt.).

SOUTHERN CHINCH BUG (Blissus insularis) - ALABAMA - Heavy; damaged St. Augustinegrass lawn at Montgomery, Montgomery County, week ending September 3. (Bryant, Adams).

FORAGE LEGUMES

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Small larvae up to 100 per square foot on alfalfa in Stephens County and 25-30 per square foot in Lincoln County. Moderate on Serica lespedeza in Okmulgee County. (OK Coop. Sur.). KANSAS - Moderate on seedling alfalfa in Kiowa County. (Bell).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - UTAH - Damaged second crop alfalfa in Beaver Dam area of Box Elder County. (Lindsay).

ALFALFA CATERPILLAR (Colias eurytheme) - TEXAS - Adults heavy on alfalfa in Hudspeth, Pecos, Reeves, and Ward Counties. (Neeb).

CLOVER ROOT CURCULIO (Sitona hispidulus) - KENTUCKY - Adults 5.8 and 3.1 per square foot in red clover and alfalfa fields, respectively, in Fayette County. Sticky trap collections indicate flight activity. (Leibee, Yeargan).

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) - PENNSYLVANIA - Heavily damaged alfalfa in Bradford County. (Gates).

PEA APHID (Acyrtosiphon pisum) - NEVADA - Up to 200 per sweep in some alfalfa fields at Pahrump, Nye County. (Zoller). TEXAS - Light to moderate in isolated alfalfa fields in Pecos, Reeves, Hudspeth, and El Paso Counties. (Neeb).

BLUE ALFALFA APHID (Acyrtosiphon kondoi) - UTAH - Collected on alfalfa at Flowell, Millard County by R.S. Roberts, July 26, 1976, at Milford, Beaver County, June 20, at Enterprise, Washington County, July 27. Determinations by M.B. Stoetzel. These are new county records. (Roberts, Knowlton).

SOYBEANS

DISEASES

BACTERIAL PUSTULE (Xanthomonas phaseoli var. sojense) - KANSAS - Percent infected soybean plants in fields by county: Coffey trace to 5, Montgomery 80, Labette 90, Crawford 40, Johnson trace, Osage 10, Wabaunsee 90, Neosho 10. (Sim).

CHARCOAL ROT (Macrophomina phaseolina) - KANSAS - Percent infected soybean plants in fields by county: Coffey 50, Woodson 90, Allen trace, Labette 70, Cherokee 90, Bourbon 90, Linn 10, Anderson 50, Douglas trace. (Sim).

FROGEYE LEAF SPOT (Cercospora soja) - FLORIDA - Still heavy in most soybean fields without treatment. (FL Coop. Sur.).

SOYBEAN BROWN SPOT (Septoria glycines) - KANSAS - Percent infected soybean plants in fields by county: Coffey trace, Woodson 80-100, Neosho 100, Wilson 80, Montgomery 40-80, Crawford 80, Linn 100, Anderson 10, Osage 100. (Sim).

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - A light population found at Nashville, Davidson County, on soybeans. Collected and determined by R. Harrison, July 21, 1976. This is a new county record. (Harrison). Recent dry weather made damage very apparent in most infested areas of State. (Gordon, Bruer).

INSECTS

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - FLORIDA - Averaged up to 20 per row in some soybean fields in Jackson County; 158 of 1,200 acres need treatment. (FL Coop. Sur.).

ALABAMA - Larvae averaged 120 per 60 feet in one Geneva County soybean field week ending September 3. Occasional larva and adult in 10 soybean fields in Russell, Bullock, and Macon Counties. (Bolling et al.). Currently, larvae and adults light as predominant foliage feeders in 15 soybean fields in Greene and Sumter Counties. Larvae 28 per 60 feet of row in one Geneva County field. Recent "hatch-out" developed, expected to damage late beans in Geneva County and southeast area. (Stephenson). NORTH CAROLINA - Increased in some late-planted soybeans. Treatments applied to 10 acres in Washington County. Damage most prevalent on beans after small grains. (Van Duyn).

SOYBEAN LOOPER (Pseudoplusia includens) - FLORIDA - Aerial control difficult. Spray not reaching under canopy of large soybean plants; ground application needed. (FL Coop. Sur.). ALABAMA - Larvae predominant foliage feeder in 5 soybean fields in Tuscaloosa County. Virus developing, affected 10 percent of noneconomic population. Larvae 19 per 60 feet of row in Geneva County field. (Pitts et al.).

GREEN CLOVERWORM (Plathypena scabra) - OKLAHOMA - Ranged 0-5 per row foot in soybeans in Le Flore, Muskogee, Wagoner, Haskell, Sequoyah, and Ottawa Counties. Moderate in Craig County. (OK Coop. Sur.). KENTUCKY - Adults numerous but larvae fewer than one per 20 sweeps in Fayette County. (Yeargan).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Averages per 30 row feet of soybeans (average percent defoliation) by County: Lancaster, 4.8 (12.2) in 5 fields; Westmoreland, 38 (12.1) in 38 fields totaling 764 acres; Richmond, adults 18 and larvae 10.5 (7.2) in 18 fields totaling 431 acres. Only one field in Richmond County required treatment. (Allen).

GREEN STINK BUG (Acrosternum hilare) - OKLAHOMA - Ranged 0-9 per row foot of soybeans in Le Flore, Muskogee, Wagoner, Haskell, Sequoyah, and Ottawa Counties. (OK Coop. Sur.).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - TEXAS - Moderate on soybeans in Hardin County, up to 3 percent of stalks in some fields with old damage. (Cole).

PEANUTS

INSECTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - FLORIDA - Caused problems in most peanut fields in Bascom and Malone areas of Jackson County. (FL Coop. Sur.).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Damaged 72 percent of one Glasscock County cotton field. Damage 2-79 percent in Howard County. Taken in Martin County first time this season. Five adults trapped southwest of Knott, Howard County. Infested nearly all cotton in Howard County. (Moore et al.). OKLAHOMA - Punctured square counts ranged 12-50 percent on cotton in Grady County. Adults continued very heavy in McClain, Washita, Caddo, and Beckham Counties. (OK Coop. Sur.). TENNESSEE - Still heavy in attractive cotton fields. No controls recommended. (Gordon, Bruer).

BOLLWORMS (Heliothis spp.) NEW MEXICO - BOLLWORM (H. zea) controls applied as populations increased in cotton squares and bolls in Artesia area in Eddy County and in Chaves County. (NM Coop. Rpt.). TEXAS - H. zea eggs up to 52 percent in Ellis and Navarro Counties. Activity on cotton decreased in Crosby County. Egg laying decreased in Hale County. Heaviest damage 6 percent, eggs 1-4 percent in St. Lawrence area. Activity light to moderate in isolated Glasscock County fields; eggs on 2-10 percent per 100 plants, larvae 2-5 percent, damaged squares 6-10 percent. Eggs averaged 4-5 per 100 terminals in El Paso Valley. Larvae averaged 5-6 (up to 10 percent) per 100 terminals in some fields at Acala Lake, Cameron County. TOBACCO BUDWORM (H. virescens) light in traps and fields in Glasscock, Martin, Howard, Pecos, Reeves, and El Paso County. (Moore et al.). OKLAHOMA - H. zea damaged square counts ranged 4-5 percent on cotton checked in Grady County. Light in McClain, Washita, Caddo, and Beckham Counties. (OK Coop. Sur.).

ALABAMA - H. zea and H. virescens on cotton statewide; H. zea predominant week ending September 3. Larvae damaged few hundred acres in central and north area. Controls generally satisfactory. (McQueen). TENNESSEE - Many cotton fields attractive to Heliothis spp. due to recent rains. Eggs and larvae above control level in many fields. Boll damage apparent; controls recommended (Gordon, Bruer).

BEE T ARMYWORM (Spodoptera exigua) - TEXAS - Light in isolated cotton fields in Pecos, Reeves, El Paso, Hudspeth, and Culberson Counties. (Neeb).

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) - TEXAS - Light in cotton fields in Glasscock, Martin, Howard, Pecos, Reeves, El Paso, and Hudspeth Counties. Ranged 0-10 per 100 terminals. (Neeb).

MISCELLANEOUS FIELD CROPS

INSECTS

SUNFLOWER MOTH (Homoeosoma electellum) - TEXAS - Economic in many sunflower fields in High Plains. (Morrison).

A WEEVIL (Cylindrocopturus adspersus) - NORTH DAKOTA - Lodging of several sunflower fields widespread due to heavy larval infestation in Dickey County. (Scholl).

POTATOES, TOMATOES, PEPPERS

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Infestations in untreated, mature sweet peppers increased; averaged about 40 percent in western Sussex County. (Burbutis, Kelsey).

COLE CROPS

INSECTS

CABBAGE MAGGOT (Hylemya brassicae) - PENNSYLVANIA - Heavily infested 10-acre cabbage field in Blair County. About 75 percent of cabbage damaged. (Gesell).

GENERAL VEGETABLES

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Adult activity very heavy on vegetables in Montcalm County week of September 3, decreased in other counties. (Cress).

DECIDUOUS FRUITS AND NUTS

INSECTS

PECAN WEEVIL (*Curculio caryae*) - TEXAS - Infested 4 percent of pecan crop in Eastland County, ranged 8-10 per tree. Extremely heavy in Hood, Erath, Comanche, Somervell, and Hamilton Counties. Adults 39 per limb in Comanche County. Adults 1-3 per nut cluster in Hamilton County. Total of 147 under treated tree in Erath County. (Gordon, Hoelscher). OKLAHOMA - Adult emergence still heavy in pecan orchards in Love County. (OK Coop. Sur.).

WALNUT CATERPILLAR (*Datana integerrima*) - TEXAS - Larvae heavily damaged pecan foliage in Pecos and Upton Counties, damage light in Glasscock County. (Neeb).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - TEXAS - Moderate to heavy in backyard pecan trees in Terrell and Pecos Counties. Light in Upton County. (Neeb).

A TEPHRITID FLY (*Rhagoletis juglandis*) - NEW MEXICO - Collected from black walnut at Las Cruces, Dona Ana County, by W. Iselin, July 11, 1976. Determined by G. Steyskal. This is a new county record. (NM Coop. Rpt.).

YELLOW PECAN APHIDS (*Monellia* spp.) - TEXAS - Light to heavy, 0-120 per compound pecan leaf, in El Paso, Upton, Terrell, Glasscock, Pecos, Reeves, Brewster, and Jeff Davis Counties. (Neeb).

FOREST AND SHADE TREES

DISEASES

DUTCH ELM DISEASE (*Ceratocystis ulmi*) - MINNESOTA - Noted on *Ulmus americana* (American elm) at Breckenridge, Wilkin County, August 16, 1976. Collected by G. MacTaggart. Determined by S.A. Roman. This is a new county record. (MN Pest Rpt.).

INSECTS

FALL WEBWORM (*Hyphantria cunea*) - KENTUCKY - Orange-headed race neared pupation on wild cherry; scarce. Black-headed race in second generation; larvae heavy in Clark, Montgomery, Fayette, Menifee, and Bath Counties on mulberry, redbud, hickory, and elm. No black-headed larvae found on wild cherry. (Nordin).

SADDLED PROMINENT (*Heterocampa guttivitta*) - MICHIGAN - Larvae defoliated about 2,000 acres of beech, maple, birch, and ironwood trees on South Manitou Island week of August 20. Thousands of late-instar larvae at bases of defoliated trees dead or dying from starvation. Many live larvae seem infected with bacterial or viral disease. (Kennedy, Liebherr).

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) - OKLAHOMA - Damaged pin and burr oaks in Stillwater area, Payne County. Larvae ranged newly hatched to half grown. Light on oaks in Tulsa County. (OK Coop. Sur.).

MOURNINGCLOAK BUTTERFLY (Nymphalis antiopa) - NEW MEXICO - Defoliated elms and willows in Dexter area, Chaves County. (NM Coop. Rpt.).

ORANGESTRIPED OAKWORM (Anisota senatoria) - MASSACHUSETTS - Larvae on oak in Middlesex County. (Garland).

A SPITTLEBUG (Clastoptera salicis) - MISSOURI - Collected from willow at Columbia, Boone County, by W.S. Craig, July 19, 1976. Determined by T.R. Yonke. This is a new county record. (Munson).

GIANT BARK APHID (Longistigma caryae) - PENNSYLVANIA - Nymphs and adults heavy on 60 to 80-foot sycamore trees near Harrisburg, Dauphin County. (Henry, Wheeler).

MULBERRY WHITEFLY (Tetraleurodes mori) - NEVADA - Heavy on mulberry trees at Las Vegas, Clark County. (Zoller).

SAN JOSE SCALE (Quadraspidiotus perniciosus) - MONTANA - Heavy on cottonwood trees at Malta, Phillips County; some trees dying. (Jensen).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - COLORADO - Populations 100+ per side on untreated cows in Weld County. (Hantsbarger). TEXAS - Increased on cattle in Pecos, Reeves, Terrell, Crockett, Brewster, Jeff Davis, Upton, Reagan, and Glasscock Counties. (Neeb). NORTH DAKOTA - Ranged 5-600 (averaged 490) per side per 10 head of beef cattle in McKenzie County. (Brandvik). FLORIDA - Adults averaged 144 per animal in one small beef herd and 650 per animal in second herd in Gainesville area, Alachua County. (FL Coop. Sur.). ALABAMA - Increased, ranged 100-1,000 per animal on most cattle herds in Lee, Tuscaloosa, Greene, and Sumter Counties. (McQueen).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Heavy populations severely annoyed cattle in parts of Brown County. (WI Pest Sur.).

MOSQUITOES - TEXAS - Light to moderate on cattle in Glasscock, Brewster, Jeff Davis, Terrell, and Pecos Counties. (Neeb).

BROWN DOG TICK (Rhipicephalus sanguineus) - NEW MEXICO - Moderate in Las Cruces area, Dona Ana County. Controls needed on many pets in area. (NM Coop. Rpt.).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

A BRACONID WASP (Microctonus aethiopoides) - INDIANA - Collected on alfalfa in Wills Township, LaPorte County, by M.C. Wilson May 24, 1976. Determined by Van Driesche (no initials given). This is a new county record. (Meyer).

A EULOPHID WASP (Pediobius foveolatus) - VIRGINIA - Adults previously released aided in control of Epilachna varivestis (Mexican bean beetle) in some fields in Isle of Wight County. (Allen).

AN ELASMATID WASP (Elasmus albizziae) - PENNSYLVANIA - Reared from Homadaula anisocentra (mimosa webworm) collected in Somerset County. Heavy parasitism reported. Determined by K.R. VALLEY. (Henry).

FEDERAL AND STATE PROGRAMS

INSECTS

GRASSHOPPERS - MINNESOTA - Adult survey complete in 50 counties. Average adults per square yard on alfalfa by district: Southwest 5.7, south-central 3.1, southeast 2.7, west-central 11.6, central 11.5, east-central 8.5, and northwest 4.4. Predominant species in all districts Melanoplus femurrubrum and M. bivittatus. M. differentialis trace. (MN Pest Rpt.).

GYPSY MOTH (Lymantria dispar) - Adult trap collections determined by E.L. Todd in following States for first county finds: MICHIGAN one in Cedar Township, Osceola County by M. Hannah September 13, 1976; MINNESOTA one at Minnetonka Beach, Hennepin County, by H. Mobraaten August 11; WISCONSIN one in Calumet County section of Appleton by R. Jakubek July 30. (PPQ). Total of 11 moths trapped statewide as of September 10. One in Dane County east of Madison, 9 in Outagamie County section of Appleton. (WI Pest Sur.). NORTH CAROLINA - Males (3) taken in sexlure trap in Avery County August 23-27. Two separate collections taken September 13-15 at Greensboro. Counts represent total collection to date. (Hoffman, Weatherman). VIRGINIA - Adult males trapped in Washington County by B.M. Saunders and Northumberland County by T. Szarzynski and R. Bowden. Determined by H.S. Smith and W.F. Tate. (Allen).

JAPANESE BEETLE (Popillia japonica) - WISCONSIN - No adults taken in Kenosha or any place else statewide as of September 17; first time in several years. (WI Pest Sur.).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Single male recovered from Steiner trap in San Diego County near La Mesa September 13, 1976. Collected by P. MacBosson. Determined by M. Wasbauer. Area had continuous traps all year. (CA Pest Rpt.).

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - Nonsterile adult male taken from McPhail trap in pepper tree at San Ysidro, San Diego County. Collected by P. Jones. Confirmed by M. Wasbauer. (CA Pest Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Light on cotton across Trans-Pecos area. Boll infestations averaged less than one percent in El Paso, Pecos, and Reeves Counties. (Neeb).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Adults emerging in Union County, pupation about 90 percent complete. (NM Coop. Rpt.).

SCREWWORM (Cochliomyia hominivorax) - Total of 1,440 cases reported from continental U.S. August 29 to September 4 as follows: Oklahoma 5, Texas 1,424, New Mexico 3, and Arizona 8. Total of 723 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 629 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 154,507,500 as follows: Texas 137,065,500, New Mexico 3,312,000, Arizona 14,130,000. Total of 7,879,500 sterile flies released within Barrier of Mexico. (Vet. Serv.).

WHITEFRINGED BEETLES (Graphognathus spp.) - ALABAMA - Adults in all soybean and peanut fields examined in Geneva, Bullock, and Macon Counties week ending September 3. Up to 40 per 60 feet in one Geneva County field. Occasional adult taken in Perry and Blount Counties. (Stephenson et al.). Several adults currently collected in two soybean fields as foliage feeders in Tuscaloosa County. (Pitts et al.).

HAWAII PEST REPORT

General Vegetables - Infestations and damage by LEAFMINER FLIES (Liriomyza spp.) heavy on 1.50 acres of tomato at Lualualei, Oahu, and one acre of snap beans at Pulehu, Maui. Moderate on 6 acres of green onions (25-30 percent of leaves, 4-12 mines per leaf) at Lualualei and Waianae, Oahu, and on 4 acres of tomato at Pulehu. Light on 0.50 acre of Chinese peas at Omaopio, Maui, 0.50 acre of eggplant, and 0.25 acre of green onion at Manoa, Oahu. CARMINE SPIDER MITE (Tetranychus cinnabarinus) populations moderate to heavy on one acre of togan at Waianae on one acre of bell pepper and 1.50 acres of tomato at Lualualei. Light on 0.50 acre of eggplant at Waianae. GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) infestations moderate to heavy on 0.50 acre of eggplant at Waianae. Light on 0.25 acre of Manoa lettuce, on 4 acres of tomato at Pulehu, 0.50 acre of Chinese peas and Irish potato at Omaopio, Maui. BEAN FLY (Ophiomyia phaseoli) infestations and damage heavy (100 percent of stems and 30 percent of petioles) on 1,000 square feet of yardlong beans at Waianae. All stages of a TREEHOPPER (Antianthe expansa) heavily infested and damaged backyard bell pepper plantings at Manoa, Oahu. (Miyahira, L. Nakahara).

Beneficial Insects - A PTEROPHORID MOTH (Oidaematophorus sp.) noted for first time at Mountain View, Hawaii Island, during August survey. This is lowest elevation (1,500 feet) observed in field. Defoliation heavy at Ahualoa (2,500 feet), Honomalino (2,000 feet), Hualalai Gulch, and under shaded areas of Palani Ranch (3,500 feet). Infestations by a GALL FLY (Procecidochares alani) heavy (60-100 percent of terminals galled) at Onomea and Honomalino, Hawaii. (Matayoshi, Yoshioka).

Fruits and Nuts - A LADY BEETLE (Coelophora pupillata) taken along with BROWN CITRUS APHID (Toxoptera citricida) on several backyard Citrus sp. trees at Kaunakakai, Molokai, August 13, 1976. Collected and determined by L. Nakahara. C. pupillata is new island record. (L. Nakahara).

Miscellaneous - Single adult SWEAT BEE (Halictus sp.) taken at large at Maunaloa, Molokai, August 12, 1976. Collected and determined by L. Nakahara. This is a new island record. (L. Nakahara). Follow up surveys for BROWN GARDEN SNAIL (Helix aspersa) conducted at Koloa residence where single specimen found in June 1976 negative. (Sugawa)

DETECTION

NEW COUNTY AND ISLAND RECORDS

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - MINNESOTA - Wilkin (p. 625).

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Davidson (p. 622).

INSECTS

BLUE ALFALFA APHID (Acyrtosiphon kondoi) - UTAH - Millard, Beaver, Washington (p. 622).

A BRACONID WASP (Microctonus aethiopoides) - INDIANA - LaPorte (p. 627).

A LADY BEETLE (Coelophora pupillata) - HAWAII - Molokai (p. 629).

A SPITTLEBUG (Clastoptera salicis) - MISSOURI - Boone (p. 626).

SWEAT BEE (Halictus sp.) - HAWAII - Molokai (p. 629).

A TEPHRITID FLY (Rhagoletis juglandis) - NEW MEXICO - Dona Ana (p. 625).

CORRECTIONS

CPPR 1(33):527 - CORN, SORGHUM, SUGARCANE - EUROPEAN CORN BORER - KANSAS - delete" 90 percent of ears infested with smaller larvae in corn field in Sandhill area along Finney and Kearney County lines." (Bell).

[illegible]

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Puccinia horiana</u> P. Henn. a rust	uredial on cut flowers from aircraft stores	San Francisco	Japan	USA
<u>Ceratitis capitata</u> (Weidmann) Mediterranean fruit fly	larval in guavas from baggage	Hilo	Hawaii	CA
<u>Eusepes postfasciatus</u> (Fairmaire) a curculionid beetle	adult in yams from a diplomatic pouch	Washington, D.C.	Ecuador	MD
<u>Schedorhinotermes</u> sp. a termite	all with van packs of household goods	San Francisco	Western Pacific	CA
<u>Stenomoma catenifer</u> Walsingham a stenomid moth	larval in avocados from baggage	Laredo	Mexico	TX
<u>Helicella cretica</u> (Ferrussac) a snail	adult with van packs of household goods	Houston	Crete	CA
<u>Otala vermiculata</u> (Muller) a snail	adult with cargo containers	Miami	Spain	FL
<u>Theba pisana</u> (Muller) white garden snail	adult with cargo containers	Miami	Spain	FL

WEATHER OF THE WEEK ENDING SEPTEMBER 19

Reprinted from Weekly Weather and Crop Bulletin supplied by National Weather Service, NOAA.

HIGHLIGHTS: Rain dominated the weather picture throughout the week. The Washington, D.C. area, Baltimore, Maryland, the Georgia coastal areas, the Carolinas, and the Texas Pecos Valley experienced flooding from heavy rains. A cold front in the Nation's midsection on Sunday activated freeze warnings for northern and western North Dakota.

TEMPERATURE AND PRECIPITATION: Although rain fell sparingly through the northern Plains, it deluged extreme north-central Texas on Monday. Wichita Falls, Texas, registered more than 5 inches of rain in a 24-hour period and experienced flooding in some homes and city streets. Most northern Plains States recorded only about one-tenth of an inch of rain, which did little to relieve the drought situation in those areas. Other showers and thundershowers fell over the lower Mississippi Valley, the central Rockies and Florida. A few rainshowers were scattered along the Pacific Northwest coast. Indian summer continued through portions of Michigan and Wisconsin, with numerous readings in the mid-80's. Seasonably mild temperatures prevailed through the remainder of the Nation, as readings ranged from the 60's through Montana and Minnesota to the 90's in southern Texas and the Desert Southwest.

Heavy rains and high winds lashed the southeastern sector of the Nation on Tuesday, as a low pressure center over the northern Georgia coast combined with a strong high pressure system. The low pressure center unleashed more than 4 inches of rain over the Georgia coast and the Carolinas to cause local flooding. Savannah, Georgia, reported over 5 inches in a 24-hour period, and Charleston, South Carolina, listed almost 4.5 inches. The Texas Panhandle and southeastern Colorado noted locally heavy rains, local flooding, funnel clouds, and some hail. Other thundershowers were scattered through the Rockies, the western portions of the Plains States, the middle Mississippi Valley and Michigan. Unseasonably warm weather prevailed through New England, as temperatures skyrocketed to the 80 degree range. Philadelphia, Pennsylvania, tied its record high for the date at 90 degrees, while Allentown, Pennsylvania, and Concord, New Hampshire, scored at 89 degrees.

As the low pressure system drifted northward on Wednesday, heavy rains moved into eastern Virginia, Maryland, the central Appalachians, and the extreme eastern Ohio Valley region. A developing storm system caused considerable cloudiness in the western States and some thunderstorms in northern California and northern Nevada. Other rains fell in southwestern Idaho, northern Utah, the central and southern Rockies, extreme western Texas, the western Dakotas, northeastern Oklahoma, and the lower Mississippi Valley. A 6-hour period of rain found over 1.33 inches in Tulsa, Oklahoma, about 1.5 inches in Richmond, Virginia, and over one inch at Cape Hatteras, North Carolina. Locally heavy rains spread over the Northeast on Thursday and caused much local flood activity. The Washington, D.C., area reported more than 4 inches in a 24-hour period, with some roadways and low-lying areas under water. Other extensive rainfall included over

4 inches in Baltimore, Maryland; about 2.5 inches in Allentown, Pennsylvania, and almost 2 inches in Martinsburg, West Virginia. Clouds and some fog covered much of the central and southern Plains States. Clouds enveloped a portion of the northern Rockies and the eastern part of the northern Intermountain region. Severe weather included 2 tornadoes, during the afternoon. One hit near Camp Springs, Maryland, and the other occurred at Ardmore, Oklahoma. No damage or injuries were reported. Showers and thundershowers dominated the weather scene Friday, as substantial amounts of rain fell over portions of the northern Atlantic States, northeastern New Mexico, parts of Texas, and the lower Mississippi Valley. Shreveport, Louisiana, reported more than 3 inches of rain in a 6-hour period, while Washington, D.C., and Baltimore, Maryland, received over 3 inches in a 24-hour period.

The weekend brought a few showers and thundershowers across southwestern Texas, the lower Mississippi Valley, the central Plains, southern Florida, and the northern Rockies. The lower Pecos Valley in Texas listed over 5 inches of rain in a 6-hour period, which caused some flood activity throughout the weekend. A strong cold front pushed through the Nation's midsection on Sunday and caused thundershower activity and much cooler temperatures. A freeze warning was issued for northern and western North Dakota, as the pool of cold air moved southeastward.

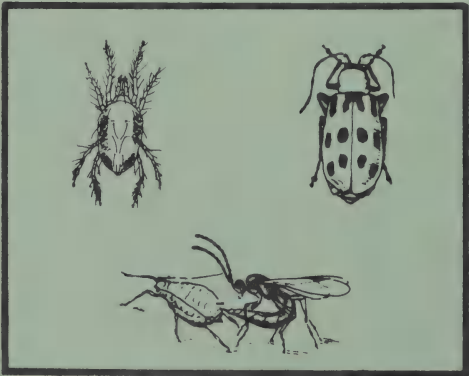
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Inspection
Service

U.S.
DEPARTMENT
OF AGRICULTURE



This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

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COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

EUROPEAN CORN BORER still heavy in corn in Pennsylvania (p. 637), common in gladiolus in Massachusetts (p. 641).

FALL ARMYWORM damaged young sorghum in Florida, continued to damage sorghum and late corn in North Carolina. (p. 637). Black-light catches heavy in Kansas. (p. 648). SOUTHWESTERN CORN BORER heavy on seed corn in New Mexico, worst infestation this season in Missouri. (p. 637).

ALFALFA BLOTCH LEAFMINER heavy on alfalfa in Massachusetts and Pennsylvania. (p. 638).

GRASSHOPPER survey results for Nebraska generally same as 1975 but significant increases in some areas. (p. 645)

Record male flight of COMSTOCK MEALYBUG in California for 1976. (p. 644).

Detection

New host for CITRUS BLACKFLY in Florida. (p. 644).

A EUCNEMID BEETLE (p. 642), CHRYSOMELID BEETLES (p. 643), and AN ANOBIID BEETLE (p. 646), are new State records for Maryland.

For new county, island, and parish records see page 646.

Special Reports

Distribtuion of Range Caterpillar (map). (p. 652).

Summary of Insect Conditions in the United States - 1975
Introduction. (p. 653).

Special Insects of Regional Significance. (pp. 653-666).

Reports in this issue are for the week ending September 24 unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

CORN EARWORM (Heliothis zea) - ALABAMA - Increased in soybeans in Coffee County. (Casaday). NORTH CAROLINA - Most damage to soybeans over except in very late fields. Damage noted in Rowan and Cleveland Counties. Infestations above threshold (2 per row foot) in total of 25 acres in both counties. Digging underway in peanut-growing area in Beaufort and Bertie Counties. Foliage damage continued in small percentage of acreage. (McNeely et al.). VIRGINIA - Larvae per 30 row feet of soybeans by county: Richmond 2.6 in 34 fields (975 acres), Northumberland 0.7 in 6 fields (120 acres), Westmoreland 4.6 in 19 fields (361 acres). Damage in most coastal counties decreasing rapidly as soybeans mature and cool wet weather occurs. No treatments needed. (Allen). MARYLAND - Infestations economic in isolated soybean fields in Queen Annes, Dorchester, and Wicomico Counties. Full grown larvae 3 per ear in 120 acres of 60-day corn in Talbot County after second treatment. Populations increased on lima beans. (U. Md., Ent. Dept.). NEW YORK - First adults taken in Ontario County light trap week of September 11, 21 days later than in 1975. (Willson).

POTATO LEAFHOPPER (Empoasca fabae) - PENNSYLVANIA - Average per sweep of alfalfa (and percent yellowing) by county: Centre 0.3, 1.2 (5-10); Crawford 0.2 (5); Snyder 0.5 (trace); Union 0.05. Late season alfalfa in fair to good condition. (Albright, Shiner).

TOMATO HORNWORM (Manduca quinquemaculata) - WISCONSIN - Problem on tomatoes in Juneau County. (WI Pest Sur.).

CORN, SORGHUM, SUGARCANE

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - PENNSYLVANIA - Larvae still heavy on corn. Larvae per 20 cornstalks by county: Berks 5, Cumberland 23-35. (Maxwell, Proctor). NEW HAMPSHIRE - Second-generation larvae infested 35 percent of sweet corn ears at Stratham, Rockingham County. (Turmel).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - NEW MEXICO - Larvae averaged 3-4 per cornstalk in Union County seed corn. Some lodging noted near Clayton. (NM Coop. Rpt.). MISSOURI - Girdled 25 percent of stalks in field of irrigated corn in southeast area, 22 percent of plants on ground. Larvae 60-70 percent unspotted. Most severe infestation this season. (Munson).

FALL ARMYWORM (Spodoptera frugiperda) - FLORIDA - Damaged young sorghum, treatment required on 200 acres in Marion County and 40 acres at Chiefland, Levy County. (FL Coop. Sur.). NORTH CAROLINA - Sorghum and late corn damage continued. Spot damage noted in Alamance, Person, and Wake Counties. (Swann, Hunt). MARYLAND - Late-instar larvae 3 per 10 ears in 60-day corn along with heavy CORN EARWORM (Heliothis zea) infestation in Talbot County. Light and spotty in normal late plantings statewide. (U. Md., Ent. Dept.).

SORGHUM WEBWORM (Celama sorghiella) - MISSOURI - Light in 2 of 6 late-planted sorghum fields in southwest area week ending September 17. Larvae 0-37 per 10 heads in infested fields. (Munson).

CORN ROOTWORMS (Diabrotica spp.) - WISCONSIN - NORTHERN CORN ROOTWORM (D. longicornis) and WESTERN CORN ROOTWORM (D. virgifera) adults heavy on late-planted corn in several areas of State. Populations decreased after several frosty nights. (WI Pest Sur.). PENNSYLVANIA - D. longicornis adults per 20 cornstalks by county: Berks 7; Cumberland 4-6. (Proctor, Maxwell).

RICE WEEVIL (Sitophilus oryzae) - NORTH CAROLINA - Egg laying and developing larvae noted on standing corn in eastern and southern Coastal Plain. Infested 30 percent of 50 ears in 25 fields in Beaufort, Hyde, and Duplin Counties. (Hunt, Van Duyn).

POTATO APHID (Macrosiphum euphorbiae) - TEXAS - Small colonies in most green corn in Panhandle area. (Patrick).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Heavy populations damaged late corn in Dallam County. (Patrick).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - Populations damaged grasses in pastures, football fields, and lawns in Winston, Randolph, and Coffee Counties. (Murphy et al.).

FORAGE LEGUMES

INSECTS

ALFALFA CATERPILLAR (Colias eurytheme) - CALIFORNIA - Small acreage of alfalfa hay treated in Imperial County, infestation not serious. (CA Pest Rpt.). MARYLAND - Adult flights heavy over alfalfa fields in Caroline County. (U. Md., Ent. Dept.).

ALFALFA WEEVIL (Hypera postica) - MISSOURI - Adults 0-9 per 10 sweeps in alfalfa in north-central and northwest areas. (Munson).

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) - MASSACHUSETTS - Average adults (and eggs) per tiller by county: Hampshire, at Amherst 0.9 (2.4); Franklin, at Northfield 2.3 (6.1), at Deerfield 5.0 (4.0), at Sunderland 13.9 (21.6), at Gill 1.4. (Andaloro). PENNSYLVANIA - Adults per sweep of alfalfa by county: Lackawanna, at Benten 15-20 (heavy pinholing); at Scott 10-15 (1-2 mines per stem); Monroe, at Eldreb 10-15 (2-5 mines per stem). (Sporer).

BLUE ALFALFA APHID (Acyrtosiphon kondoi) - CALIFORNIA - Varied populations infested alfalfa in Fresno County. (CA Pest Rpt.).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Adults 0-21 per 10 sweeps in alfalfa in north-central and northwest areas. (Munson).

LYGUS BUGS (Lygus spp.). CALIFORNIA - Infested alfalfa seed fields in Imperial County. (CA Pest Rpt.).

GRASSHOPPERS - MISSOURI - Mainly Melanoplus differentialis, defoliated alfalfa in northwest area week ending September 17. (Burgess).

SOYBEANS

DISEASES

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Soybean damage very apparent in many fields in infested area of State. Dry weather and heavy populations made symptoms easily noted. (Gordon).

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Larval and adult feeding defoliated 70 percent of 0.5 to 1.0-acre spots in 5 soybean fields in Blount and Madison Counties. (Wilson, Cain). VIRGINIA - Adult average per 30 row feet of soybeans by county: Northumberland 49.2 (6 fields, 120 acres), defoliation averaged 10.7 percent, one field needed treatment; Westmoreland 4.5 (19 fields, 361 acres), estimated defoliation averaged 12.3 percent; Richmond (larvae also) 4.2 (34 fields, 975 acres), defoliation 7.9 percent. Populations decreased due to CORN EARWORM (Heliothis zea) treatment. (Allen). MARYLAND - Defoliation 30-40 percent (economic) in isolated soybean fields in Wicomico, Worchester, Somerset, and Kent Counties; treatments applied. (U. Md., Ent. Dept.).

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - FLORIDA - Still heavy in some Jackson County soybean fields; 295 of 1,200 acres required treatment. Problem on soybeans in western Alachua County, some treatment required week ending September 17; problem eased currently. (FL Coop. Sur.).

SOYBEAN LOOPER (Pseudoplusia includens) - FLORIDA - Predominant insect problem on soybeans in western Alachua County, 150 of 350 acres need controls. (FL Coop. Sur.).

SOUTHERN ARMYWORM (Spodoptera eridania) - FLORIDA - Increased on soybeans in Jackson County week ending September 17, no fields required treatment. (FL Coop. Sur.).

BOLLWORMS (Heliothis spp.) - MISSISSIPPI - Fed on soybeans in Marion County week ending September 17. Infested 70 percent of 30-acre field, damage to leaves and pods 15 percent. Light in other areas of State. (Jarratt).

SOUTHERN GREEN STINK BUG (Nezara viridula) - ALABAMA - Mostly nymphs, 10 per 60 feet of row in soybean field. (Stephenson).

PEANUTS

INSECTS

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - FLORIDA - Controls needed on 40 acres of peanuts in Marion County. (FL Coop. Sur.).

COTTON

INSECTS

BOLLWORMS (Heliothis spp.) - TEXAS - BOLLWORM (H. zea) heaviest egg count in Crosby County cotton 48 per 100 plants, averaged about 5 per 100 plants. Egg laying activity light to moderate, 3-8 percent in most fields in El Paso Valley. Larvae averaged 4-6 per 100 terminals in El Paso Valley. (Burgess). H. zea and TOBACCO BUDWORM (H. virescens) activity decreased in Milam County. (Byrd et al.).

BOLL WEEVIL (Anthonomus grandis) - TENNESSEE - Cotton squares too scarce for counts. Migration to succulent fields continued. Considerable boll damage observed. Treating not feasible in most cases. (Locke).

MISCELLANEOUS FIELD CROPS

INSECTS

CARROT BEETLE (Bothynus gibbosus) - TEXAS - Adult trap catches for week ending September 17 by county: Bailey 40, Briscoe 79, Cochran 109, Crosby 510, Dawson 21, Dickens 22, Donley 25, Floyd 699, Hale 57, Hockley 214, Howard 2, Knox 1,010, Lamb 270, Lubbock 14, Lynn 128, Randall one, Swisher one, Terry 166, and Yoakum 29. (Morrison).

A WHITEFLY (Aleyrodes spiraeoides) - CALIFORNIA - Adults one per leaf on safflower at Upper Lake, Lake County. (CA Pest Rpt.).

POTATOES, TOMATOES, PEPPERS

INSECTS

GREEN PEACH APHID (Myzus persicae) - NEVADA - Averaged 10 per leaf on 320 acres of potatoes at Rose Creek, Humboldt County. (Rowe).

COLE CROPS

INSECTS

CABBAGE LOOPER (Trichoplusia ni) - NEW HAMPSHIRE - All larval stages on cabbage plots at Stratham, Rockingham County. (Turmel).

DECIDUOUS FRUITS AND NUTS

INSECTS

CODLING MOTH (Laspeyresia pomonella) - NEW HAMPSHIRE - Fourth and fifth-instar larvae present in McIntosh apples in untreated orchard at Litchfield, Hillsborough County. Approximately 60 percent of fruits infested. (Turmel).

APPLE MAGGOT (Rhagoletis pomonella) - WISCONSIN - Approximately 15 percent of fruit of backyard apple tree infested in Dane County, despite weekly sprays. (WI Pest Sur.).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Larvae found in peaches at Redwood City, San Mateo County. Late peaches becoming more frequently infested. (CA Pest Rpt.).

FIG SCALE (Lepidosaphes conchiformis) - CALIFORNIA - Dimorphic adult females found at Fresno, Fresno County, on residential planting of figs. Population levels at 10-100 per leaf. (CA Pest Rpt.).

CITRUS

INSECTS

COFFEE BEAN WEEVIL (Araecerus fasciculatus) - FLORIDA - Caused moderate fruit drop of "pineapple" Citrus sinensis (sweet orange) at Taveres, Lake County. (FL Coop. Sur.).

ORNAMENTALS

DISEASES

NEMATODES - TENNESSEE - A SPIRAL NEMATODE (Helicotylenchus pseudorobustus) and a ROOT-KNOT NEMATODE (Meloidogyne sp.) moderate, AMERICAN DAGGER NEMATODE (Xiphinema americanum) light, and a STUNT NEMATODE (Tylenchorhynchus sp.) heavy on white dogwood, pink dogwood, and holly in Warren County. A SPIRAL NEMATODE (H. dihystrera) and a ROOT-KNOT NEMATODE (Meloidogyne sp.) light in soil around azaleas in Robertson County. (Harrison).

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MASSACHUSETTS - Larvae very common in gladiolus spikes in Hampden County. (Adams).

A WEEVIL (Otiorhynchus cribricollis) - CALIFORNIA - Adults seriously damaged residential plantings of lilac at Fresno, Fresno County. (CA Pest Rpt.).

FOREST AND SHADE TREES

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - OREGON - Infected most of 100+ susceptible elms in City of Union, Union County. Some tree removal but many dead trees remain. (Penrose). See this disease under Federal and State Programs.

INSECTS

COOLEY SPRUCE GALL APHID (Adelges cooleyi) - RHODE ISLAND - Especially heavy on Kent and Bristol County residential trees, particularly blue spruce. (Larmie, Relli)

A SCOLYTID BEETLE (Xylosandrus compactus) - LOUISIANA - Collected from Magnolia grandiflora (southern magnolia) at Metairie, Jefferson Parish, August 12, 1976 by K.D. Braud. Also taken at Covington, St. Tammany Parish, August 17, 1976, by E.A. Cancienne, at Lacombe August 10, 1976 by J.M. Bankston, and at Folsom July 9, 1976 by A.D. Oliver. All determined by E.A. Cancienne except Folsom collection, determined by A.D. Oliver. These are new parish records. (Cancienne).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Second-generation adults still active in all western areas monitored with multilure traps. Available adult counts by county; Multnomah, 151 at Portland; Marion, 12 at Salem September 13-20. (Penrose). WASHINGTON - Adults collected at large at Vancouver, Clark County, by D.F. Mayer July 12, 1976. Determined by L. Wright. This is a new county record. (Wessler, Retan).

AN EUCNEMID BEETLE (Nematodes atropos) - MARYLAND - Collected on Quercus sp. (a black oak) at Butler, Baltimore County, by E.J. Ford, June 23, 1976. Determined by T.J. Spilman. This is a new State record. (U. Md., Ent. Dept.).

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) - MISSISSIPPI - Infested several types of oak trees in Oktibbeha County week ending September 17. (Anderson). ALABAMA - Larvae damaged foliage on many oak trees in Jefferson and Marion Counties. (Smith et al.).

ELM LEAF BEETLE (Pyrrhalta luteola) - NEW MEXICO - Larvae feeding at Santa Fe, Santa Fe County, appears heavier than in past years. (NM Coop. Rpt.).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Second-generation larval activity increased to heavy webbing on trees in Santa Fe, Taos, Bernalillo, Valencia, Sierra, and Dona Ana Counties. Some trees entirely covered. (NM Coop. Rpt.). COLORADO - Infestations heavy on Delta County cottonwood. (Hantsbarger). MASSACHUSETTS - Larvae leaving nests and migrating to pupation sites in Middlesex County. (Garland).

A PIT SCALE (Asterolecanium sp.) - OREGON - Emergence of crawlers appears complete. No immatures caught on ten sticky bands placed on twigs of Quercus garryana (Oregon oak), at Salem and Shaw, Marion County. Branch samples at Brush Pasture Park, Polk County, had small percentage of mature scales. These are first adults of 1976 generation. (Penrose).

MAN AND ANIMALS

INSECTS

MOSQUITOES - OHIO - Aedes sollicitans taken in bite collections and light trap near Portsmouth, Scioto County, September 14, 1976. Collected by S. Gordon, E. Peterson, and P. Hand. Determined by E. Peterson. This is a new county record. (Berry). NEW HAMPSHIRE - Females biting in late afternoon in wooded areas of Durham, Strafford County. Aedes vexans most commonly biting, but 2 biting records of relatively uncommon Psorophora ferox. (Burger).

BLACK FLIES (Simulium spp.) - NEW HAMPSHIRE - Adults of S. jenningsi group continued abundant along Connecticut and Androscoggin Rivers in Coos County. S. vittatum larvae and pupae numerous in Androscoggin River 5 miles below Errol. Larvae and pupae of S. decorum abundant at Lake outlets in Dixville Township, Coos County. Females still egg laying in favorable sites; larvae continue hatch at 60 degrees F. water temperatures. (Burger).

HORN FLY (Haematobia irritans) - MISSISSIPPI - Adults averaged 200+ on 60 head of mixed-breed cattle in Noxubee County week ending September 17. (Anderson).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Numbers continued high around some Brown County dairy farms. (WI Pest Sur.).

MISCELLANEOUS WILD PLANTS

INSECTS

CHRYSOMELID BEETLES - MARYLAND - Octotoma plicatula collected on Campsis radicans (trumpet creeper) at Ward, Somerset County, by R.L. Davis, July 14, 1976. Determined by E.J. Ford, and R.E. White. Hydrothassa vittata collected on Ranunculus sp. probably repens (creeping buttercup) at Butler, Baltimore County, by E.J. Ford, May 25, 1976. Determined by R.E. White. These are new State records. (U. Md., Ent. Dept.).

STORED PRODUCTS

INSECTS

COWPEA WEEVIL (Callosobruchus maculatus) - NEVADA - Heavy infestation in food warehouse at Las Vegas, Clark County. (Arrigo).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

BRACONID WASPS - NEW MEXICO - Several specimens of Agathis acrobasis reared from pecan nutlets at Carlsbad, Eddy County. This parasitoid of Acrobasis nuxvorella (pecan nut casebearer) collected from this area for first time in 1975 and appears to be number one in Carlsbad area. (NM Coop. Rpt.). OHIO - Microctonus aethiopoides adults 1.5 per 100 sweeps of alfalfa at Archbold, Fulton County, and West Unity, Williams County, May 10, 1976.

Collected and determined by D.R. Lewis. Confirmed by J.K. Flessel. One male recovered July 13, from sample of 69 Hypera postica (alfalfa weevil) adults collected from alfalfa at Delaware, Delaware County, June 9. Collected by D.R. Lewis. One adult recovered by a sample of 50 H. postica new adults collected from alfalfa at West Liberty, Logan County, June 9. Both determined by J.K. Flessel. These are new county records. (Lewis).
PENNSYLVANIA - Coeloides scolytivorus determined by P.M. Marsh and a PTEROMALID WASP (Cheiopachus colon) determined by G. Gordh found parasitizing Lepersininus aculeatus (a bark beetle) infesting an ash woodpile. Adult specimens of both species collected in Feasterville, Bucks County, on July 5. (Simons).

AN ICHNEUMONID WASP (Bathyplectes anurus) - WASHINGTON - Taken in an alfalfa field at Touchet, Walla Walla County, July 7, 1976. Collected and determined by D.F. Mayer. This is a new county record. (Mayer).

FEDERAL AND STATE PROGRAMS

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - CALIFORNIA - In Sonoma County 3 more beetle samples positive. Indicates presence of diseased elm broodwood close to El Verano, Sonoma County Community Center and Stage Gulch Road site. Diseased tree found between Kenwood and El Verano. All within original disease areas found in 1975. (CA Pest Rpt.). Also see Forest and Shade Trees.

INSECTS

CITRUS BLACKFLY (Aleurocanthus woglumi) - FLORIDA - Eggs and nymphs collected by G. O'Neill September 2, 1976 from leaves on a plant of Cestrum diurnum, (dayblooming jasmine) at Ft. Lauderdale, Broward County. Determined by G. O'Neill. This is a new State host record. (FL Coop. Sur.).

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Male flight at Porterville, Tulare County, averaged 499,24 males per trap, record high for 1976, as third-generation flight continued increase. Pheromone trap catches confirmed in 73 commercial groves of lemons, pomegranates, and quince. These surveyed by county crews to find female infestations. Pheromone trap cards changed in 3 areas of Fresno and additional 121 traps placed in and around known infested areas of Modesto, Stanislaus County. Trap placement continued on rural properties in Tulare County. Bio-control activities included release of 4,800 parasites at Poplar, 600 at Plainview, and 1,700 at Strathmore for total of 7,100. (CA Pest Rpt.).

GRASSHOPPERS - NEW MEXICO - Defoliated peanuts in Portales area, Roosevelt County. Several meters of peanuts along grassland entirely defoliated. (NM Coop. Rpt.). NORTH DAKOTA - Adult survey in 22 counties of State showed increase in populations in southwest and south-central districts; decrease in northwest, west-central, central, and southeast districts. Dominant species in cropland areas include: Melanoplus bivittatus, M. differentialis, M. sanguinipes, and some M. packardii and M. femurrubrum. Economic infestations (8 or more grasshoppers per square yard) present in rangeland areas

in total acres by county: Billings - 11,830, McKenzie - 154,720, Golden Valley - 29,440, Mountrail - 1,920, Dunn - 2,500, and Slope - 960. Total of 201,379 acres of private, State, and Federal land infested with Amphitornus coloradus, Camnula pellucida, M. bivittatus, M. infantilis, M. sanguinipes and Trachyrhachys kiowa. (Scholl). NEBRASKA - Fall surveys show statewide grasshopper levels about same as last fall, but some increases noted in southeast and south crop districts. M. femurrubrum dominant species in southeast. In northeast area most prevalent species M. differentialis, M. bivittatus, and M. femurrubrum in that order. Knox County heavily infested; ranchers considering cooperative grasshopper control program for 1977. In western area heavy infestation observed in southeastern Cherry County and in Platte Valley from Lincoln to Scotts Bluff County. The most prevalent species in rangeland Aulocara ellioti, Ageneotettix deorum, T. kiowa, and Philobostroma quadrimaculatum. On western cropland M. bivittatus and M. differentialis most abundant. Increased in Gosper, Phelps, and Kearney Counties. (Keith).

GYPSY MOTH (Lymantria dispar) - VIRGINIA - Trapped at Damascus, Washington County, by B.M. Saunders and D. Warden July 26, 1976. GEORGIA - Trapped at campground near Newman, Coweta County, by K.R. Parkinson July 26. Determined by E.L. Todd. These are first county finds. (PPQ).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Annihilation crews completed nine-square-mile treatment area, Los Angeles, Los Angeles County. Second treatment to begin September 7. Fruit collecting and trapping continue negative. (CA Pest Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Trap catches remain below one moth per night in most fields in El Paso Valley. One trap near Acala averaged over 2 moths per night. (Burgess).

WEEDS

SCOTCH COTTONTHISTLE (Onopordum acanthium) - CALIFORNIA - Detected on National Park Service property in Shasta County. Park Service will conduct eradication. Infestation less than one one-hundredth acre. (CA Pest Rpt.).

RUSH SKELETONWEED (Chondrilla juncea) - CALIFORNIA - Survey and treatment within 75-square-mile Placer County eradication zone completed. Young rosettes found on animal trails and dirt roads in new areas of 174-acre property resurveyed in Placer County. (CA Pest Rpt.).

CORRECTIONS

CPPR 1(22):280 - FOREST AND SHADE TREES - "VERTICILLIUM WILT (Verticillium alboatrum) ..." should read "VERTICILLIUM WILT (Verticillium albo-atrum) ..."

DETECTION

NEW STATE RECORDS

INSECTS

AN ANOBIID BEETLE (Euceratocerus gibbifrons) - MARYLAND - Collected in black light trap at Butler, Baltimore County, by E.J. Ford, June 23, 1976. Determined by E.J. Ford and R.E. White. (U. Md., Ent. Dept.).

A CHRYSOMELID BEETLE (Octotoma plicatula) - MARYLAND - Somerset County. (p. 643).

A CHRYSOMELID BEETLE (Hydrothassa vittata) - MARYLAND - Baltimore County. (p. 643).

A EUCNEMID BEETLE (Nematodes atropos) - MARYLAND - Baltimore County. (p. 642).

NEW COUNTY, ISLAND, AND PARISH RECORDS

INSECTS

A BRACONID WASP (Microctonus aethiopoides) - OHIO - Fulton, Williams, Delaware, Logan (pp. 643-644).

AN ICHNEUMONID WASP (Bathyplectes anurus) - WASHINGTON - Walla Walla (p. 644).

A SCOLYTID BEETLE (Xylosandrus compactus) - LOUISIANA - Jefferson, St. Tammany (p. 642).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - WASHINGTON - Clark (p. 642).

A WHITEFLY (Paraleyrodes perseae) - HAWAII - Kauai (p. 647).

HAWAII PEST REPORT

General Vegetables - CARMINE SPIDER MITE (Tetranychus cinnabarinus) populations moderate to heavy on 4 acres of eggplant at Anini, Kapahi, and Hanapepe and in backyard plantings of Chinese peas at Kaumakani and soybeans at Kaumakani and Lihue, Kauai. (Sugawa, L. Nakahara). Heavy infestations of LEAFMINER FLIES (Liriomyza spp.) on one acre of cucumber at Wailua Homestead. (Miyahira et al.). TOMATO PINWORM (Keiferia lycopersicella) damage and infestations heavy (5-15 larvae per leaf on 90 percent of leaves) on backyard tomato planting at Lihue and on one acre at Anahole, Kauai. (Sugawa, L. Nakahara). GREEN PEACH APHID (Myzus persicae) infestations heavy on one acre of bell pepper (5-250 per leaf on 75 percent of leaves) at Moloaa, Kauai. Larvae, pupae, and adults of Coccinella septempunctata (a lady beetle) 1-5 per plant (heavy) and parasitism by Lysiphlebus testaceipes (a aphidid wasp) heavy with 10-20 mummies per leaf in planting at Wailua Homestead. No parasites or predators noted at Moloaa. (Sugawa, L. Nakahara). Heavy BEAN FLY (Ophiomyia phaeseoli) infestations and damage noted on backyard plantings of snap beans and yardlong beans at Wailuku and Kahului, Maui. (Miyahira). TOMATO RUSSET MITE (Aculops lycopersici) heavily infested all tomatoes in backyard planting at Lihue, Kauai. (Sugawa, L. Nakahara).

Fruits and Nuts - ORIENTAL FRUIT FLY (Dacus dorsalis) heavy (2-3 adults per tree) in 5 acres of papaya where fruits allowed to ripen on trees and rot on ground at Moloaa, Kauai. Opius oophilus (a braconid wasp) activity heavy, 1-5 adults per tree on 75 percent of trees in same planting. Infestations of a WHITEFLY (Paraleyrodes perseae) heavy on one lemon tree at Kaumakani, Kauai, September 16, 1976. Collected by D. Sugawa and L. Nakahara. Determined by J. Beardsley. This is a new island record. (Sugawa, L. Nakahara).

Beneficial Insects - Adults of a TACHINID FLY (Trichopoda pennipes var. pilipes) very active in backyard organic garden with various vegetables at Haiku, Maui. Nezara viridula (southern green stink bug) light, 75 percent parasitized by T. pennipes var. pilipes. (Miyahira).

LIGHT TRAP COLLECTIONS

[illegible]

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Phyllostictina</u> sp. a rust	uredial on <u>Beaucarnea</u> seed <u>from</u> mail	San Francisco	New Zealand	PA
<u>Uredo behnickiana</u> P. Henn. a rust	uredial on orchid plants	New Orleans	Mexico	FL
<u>Bruchophagus</u> sp. a eurytomid seed chalcid	larval in locust seed from mail	Hoboken	USSR	MT
<u>Cryptotermes</u> sp. a termite	adult in wood crates containing baskets	New York	Portugal	NY
<u>Scolytus scolytus</u> (Fabricius) a scolytid beetle	adult in 10 tons of wood dunnage	San Francisco	Europe	CA
<u>Trogoderma granarium</u> Everts khapra beetle	larval infesting a ship's hold	Norfolk	Unknown	---
<u>Helicella derbentina</u> (Andrz.) a snail	adult on containers of tires	Houston	Israel	TX
<u>Heterodera avenae</u> Wollenweber oat cyst nematode	cyst with soil on <u>Vaccinium</u> plants	Hoboken	Sweden	MD

WEATHER OF THE WEEK ENDING SEPTEMBER 26

Reprinted from Weekly Weather and Crop Bulletin supplied by the National Weather Service, NOAA.

HIGHLIGHTS: The moderate drought area in the central and southern Plains, the lower Missouri Valley, and the central Mississippi Valley received a slow but steady rain on Saturday. Earlier in the week, rains in Texas, Arizona, and California caused much flash flood activity. A Canadian cold air mass plunged temperatures to record lows and produced frosts and freezes in the Midwest and Northeast and some snow in Colorado.

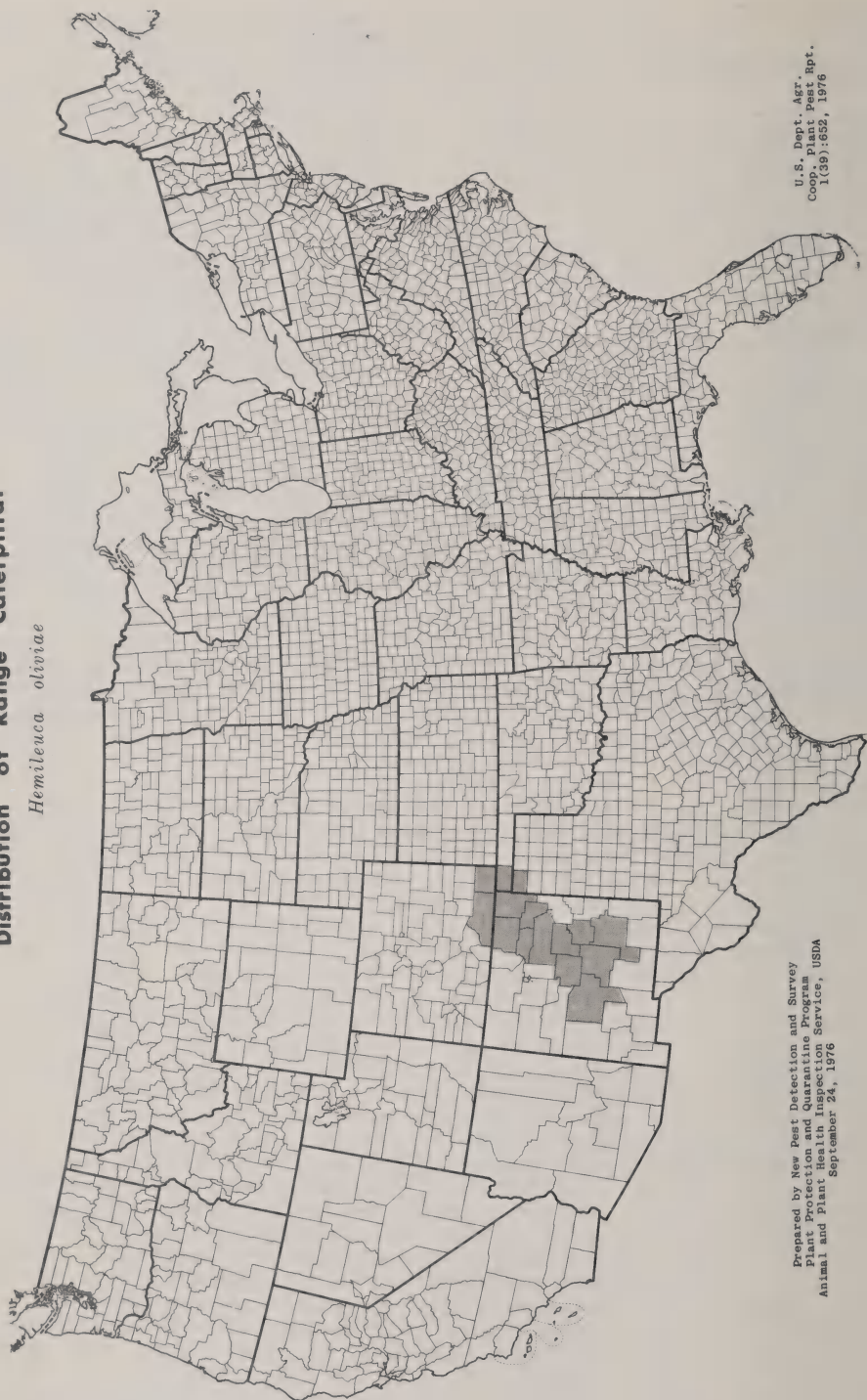
TEMPERATURE AND PRECIPITATION: Torrential rains barraged Texas on Monday, as rivers and streams escaped their banks to cause flash flooding. About 5.5 inches fell in a 6-hour period at Houston and pushed the 48-hour total to more than 11 inches. Other showers and thunderstorms were scattered from southwestern Texas through New England, over much of the Atlantic coast and the southeastern portion of the Nation. A few thunderstorms continued over the western end of the Great Lakes area, while showers and thunderstorms remained widely scattered over California into the Intermountain region. Meanwhile, the Mississippi River stage at the Memphis, Tennessee, station slipped beneath the January 1956 record low of -5.4 feet to -4.48 feet. River stages have been kept at Memphis since November 1871. A new surge of cold Canadian air moved into the upper Mississippi Valley late Monday and lowered temperatures to around the 30 degree mark early Tuesday, Bemidji, Minnesota, noted the Nation's low reading of 29 degrees, while Laramie, Wyoming, scored 30 degrees. Minimum readings dropped to only the 60 degree range in much of Washington and Oregon.

Frost and freeze warning were posted for lower Michigan, while the upper portion of the State received only a freeze warning. Wisconsin, northern and west-central Indiana, and central and northern Illinois listed frost warnings. Buckeye, Arizona, soared to 103 degrees for the Nation's high on the last day of summer, while Pittsburgh, Pennsylvania, reported the coldest summer since records started in 1870. Autumn's frosty season hit the north-central section of the Nation with full force on Wednesday, as light to moderate frost covered the area. Chicago, Illinois, reported its first frost of the season, as suburban temperatures dropped to the lower 30's. Madison, Wisconsin, reported the Nation's lowest reading at 27 degrees, while Needles, California, noted the high of 98 degrees. Snow fell over many of Colorado's higher elevations and caused travelers' advisories to be posted. By late afternoon, a new outbreak of thunderstorms started in the central high plains of Kansas and Colorado. Showers and isolated thundershowers lingered across much of the Rocky Mountains, while thundershowers were scattered across southern Florida, the lower Great Lakes area, New England, and even a few showers fell in northwest Washington. Frost dipped into the Northern Plains, upper Mississippi Valley, and the Pennsylvania mountains, while flash flooding prevailed over the Great Southwest on Thursday. Although frost covered some portions of Pennsylvania, south winds limited the severity and extent of the frost. Las Vegas, Nevada, the Lake Mead and Lake Mojave areas, an area near Kingman, Arizona, and Needles, California, reported flooding from heavy thunderstorms.

Roseau, Minnesota, recorded an early morning low of just 21 degrees, while the Nation's high reached 96 degrees at Coolidge, Arizona. The upper Midwest's temperatures plunged to record lows for September 24. Lansing, Michigan, and Madison, Wisconsin, each listed only 26 degrees, while Green Bay, Wisconsin, and Rockford, Illinois, each noted a 28 degree reading. The early morning low dipped to a mere 24 degrees at both Hibbing, Minnesota and Houghton Lake, Michigan, while the Nation's high for the day reached 95 degrees at Presidio, Texas. As the day progressed, lowland flooding continued in Texas. Flash flood alerts lingered over the Southwest, as frost warnings prevailed over the Northeast. Cloudy skies remained over the Rockies, the western high Plains States, the Southern Plateau region, southern California, much of the Great Lakes area, the Atlantic coastal plains, portions of Florida, and eastern Louisiana. Elsewhere across the Nation, partly cloudy skies persisted. A long overdue rain fell Saturday over the central and southern Plains the lower Missouri Valley, and the central Mississippi Valley, which were categorized in the moderate drought area. Rain fell at a slow but steady pace and reached one and one-third inches in Valentine, Nebraska, one and one-fourth inches in Kirksville, Missouri, three-fourths inch in Fort Riley, Kansas, and two-thirds inch in Kansas City, Missouri. South Dakota received a frost and freeze warning and a frost alert was posted for Wyoming, as the cold air mass moved southward on Sunday. The Colorado Mountains, above the 9,000 foot level, were issued a heavy snow warning. Showers and thundershowers continued to cover a large area of the Nation. This area extended east of a line from the central Great Lakes area, across southern Missouri, and into central Texas. Other showers and thundershowers lingered in the central high Plains and the upper Mississippi Valley.

Distribution of Range Caterpillar

Hemileuca oliviae



Prepared by New Pest Detection and Survey
Plant Protection and Quarantine Program
Animal and Plant Health Inspection Service, USDA
September 24, 1976

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SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1975

INTRODUCTION

The summary of insect conditions, beginning in this issue, will be continued in several succeeding issues of the "Cooperative Plant Pest Report." This summary was compiled by the New Pest Detection and Survey Staff from annual summaries submitted by various State and Federal cooperators. A list of the individuals who assisted in assembling data will appear near the end of the last section of this summary. The New Pest Detection and Survey Staff appreciates the assistance of all individuals who have participated in the preparation of material for the 1975 summary.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

Highlights:

ARMY CUTWORM larvae migrated in several counties and resulted in small outbreaks in New Mexico, it was the chief spring alfalfa pest in Utah. Alfalfa infestations occurred in Kansas and South Dakota; the first adult collection was made in Michigan. ARMYWORM was severe in many States, reaching outbreak levels in Minnesota and Michigan, it was the heaviest in 10 years in Arkansas, damage increased statewide in Iowa and North Carolina. Populations were above normal in Maryland. CORN EARWORM populations were lighter than usual in Utah and Idaho, more severe in Washington and Nebraska. Controls for this pest were not effective in Florida where it was the third important pest of peanuts. This, the most serious pest of corn in many States, shifted to soybeans late in the season. As compared to 1974, CORN LEAF APHID was more of a problem in Iowa, but in Illinois only one quarter of the acreage was treated. GREENBUG had widespread infestations in Washington, Oklahoma, and Kansas, many acres were treated. POTATO LEAFHOPPER damaged alfalfa in several States. The Wisconsin infestations were the heaviest in over 20 years. SPOTTED ALFALFA APHID extended its range into several new counties in North Dakota. TOBACCO HORNWORM was responsible for about 60 percent of the insect damage to tobacco in Florida. Damage in North Carolina was restricted to late-planted tobacco. TOBACCO BUDWORM in Florida was second in causing damage to tobacco.

ARMY CUTWORM (*Euxoa auxiliaris*) larval migrations in Curry and Roosevelt Counties, NEW MEXICO, around March 21 caused much concern and some damage to wheat. Larval migrations were widespread by March 27 on rangeland in Roosevelt, Curry, Lincoln, and Chaves Counties. Small outbreaks with some local damage were reported into early April in Luna and Valencia Counties. Counts were heavy in eastern McKinley County during early May. This was the chief lepidopterous pest on alfalfa in UTAH during the spring. Although widespread in the western third of OKLAHOMA, populations were economic only in a few fields in Harper and Beaver Counties in early April. In KANSAS, the only serious infestations occurred in scattered alfalfa fields, particularly seedling stands, in Rice,

Saline, Lincoln, Clay, Cloud, ^{Stanton} and Wallace Counties. Damage by army cutworm was severe to young alfalfa in southeastern SOUTH DAKOTA. Over 3-4 larvae per square foot infested established stands; controls were applied. The first adult of army cutworm ever recorded in MICHIGAN was collected at the Oceana blacklight station June 19. Larvae have been collected previously.

ARMYWORM (*Pseudaletia unipuncta*) ranged 10-20 per square foot, and damaged wheat in western OKLAHOMA from mid-May to early June; many fields were treated. *Apanteles* sp. (a braconid wasp) and tachinid flies helped to reduce numbers. Infestations on small grains in ARKANSAS were the heaviest and most widespread in 10 or more years. Counts reached highs of 25-30 per square foot in some fields. Surveys detected the first infestations in late April. Very little loss occurred. Controls required on about 30 percent of the acreage, cost \$1,440,000. This pest on scattered wheat and barley in the eastern two-thirds of KANSAS caused the most damage in the eastern counties of the south-central district and Butler and Cowley Counties. Infestations damaged brome grass in Jackson and Douglas Counties, rye in Douglas County, seedling corn in Montgomery and Atchison Counties and sorghum in Crawford County. The first significant adult flights occurred in Barton County in late April and in Riley County in early May. Scattered heavy infestations of newly hatched to two-thirds-grown larvae were found the third week of May. Many fields were treated by early June. A population decrease by the second week of June was aided by pupation and heavy parasitism.

The first armyworm adult in MISSOURI was trapped March 20 in Douglas County; the first larvae were reported in mid-April in the south-central and southeastern areas. Small larvae ranged 5-30 per foot of row on wheat and barley in the southwestern and southeastern areas until May 10. From mid to late May, controls were applied to small grains throughout the southeastern area. From late May to mid-June, larvae in the northern areas ranged 2-36 per foot of row. Economic levels were reached in late June, but very little treatment was needed in northern areas due to 18-76 percent parasitism. Larvae, 0-6 per square foot, infested fescue in the south-central area and orchardgrass in the southwestern area in early May. By late May and early June, controls were applied to some fields. At the same time on brome grass in the northwestern area, larvae were moderate to heavy, 2-40 per square foot. Few fields were treated due to heavy parasitism. Counts on corn ranged light to moderate from mid-May to mid-June. Counts on minimum-tilled corn in central and northeastern Missouri were heavy, 1-5 larvae per plant, on 10-30 percent of the plants. Heavy populations moved into marginal rows of corn during early June in northeastern and north-central areas after nearby hay was harvested.

Armyworm adults in IOWA were first collected in a light trap in Story County the week ending May 2. During the week ending June 6, the first damage to field corn occurred in Henry and Lee Counties where 1-2 larvae per plant were detected. Damage during the week ending June 13 occurred in Clinton, Franklin, Iowa, Jackson, Jasper, Lee, Linn, Union, Van Buren, Washington, and Winneshiek Counties. During the week ending June 20, over 1,000 acres of wheat in Harrison County were treated. During the week ending July 18, damage occurred in Fayette, Polk, and Winneshiek

Counties. Armyworm adults peaked on June 19 in light traps in Story County. Damage in 1975 increased statewide. Armyworm in NORTH DAKOTA ranged up to 23 per square foot, primarily in the eastern area, on barley and hard red spring and durum wheat by the end of July. Controls were applied. Armyworm was a major problem in MINNESOTA. Although economic concentrations were very spotty, lighter infestations occurred in 50 counties statewide. Heavy numbers of adults in mid-June and favorable weather for larval development indicated an impending outbreak. Over 760,000 acres were treated, but most treatment was not based on any counts.

Armyworm defoliation of untreated field corn at Jay, Santa Rosa County, FLORIDA, in early July was probably the worst ever. Overwintering populations in ALABAMA damaged 20 percent of 130,000 acres of wheat and 33,000 acres of oats. Damage was more serious in the northern area. Controls were applied to about 25 percent of the acreage. Infestations in SOUTH CAROLINA began in mid-February on rye. By April, a widespread outbreak had developed on small grains statewide. Damage continued throughout May. Armyworms in TENNESSEE damaged more than 14,000 acres of corn, small grain, and pasture crops in 19 counties from late May until mid-June. Controls were applied to almost 13,000 of these acres.

Armyworms in NORTH CAROLINA damaged late corn and sorghum during May and early June across the entire Piedmont and northern Coastal Plain. Counts of 6 larvae per plant infested no-till fields in Wake, Warren, and Halifax Counties. Damage was again heavy in Pamlico, Beaufort, Washington, and Pasquotank Counties; 8,000 acres of wheat are treated annually, but damage in 1975 was much more severe. Treatment was required as far west as Stanly County. In some tidewater fields, larvae reached 20 per square foot. The heaviest counts in the Piedmont reached 5 larvae per square foot. Controls were applied to about 20,000 acres. Armyworm damage, mostly to wheat and barley, was heaviest in western and southern KENTUCKY. Early controls minimized damage on most of the total 20,000 acres. Damage was severe on conventionally tilled corn, heaviest on late-planted corn, in the western areas in early June.

Armyworms on ILLINOIS corn required control treatments on 28,000 acres, mostly on no-till corn in the southern half of the State. Adults were light in light traps in Champaign County during the last week of April. By the second week of May, small larvae averaged up to 10 per foot of row on lodged wheat in Gallatin County and one per 3 feet of row in Jackson County. By the next week, larvae were light in all fields checked in the southwest and southeast districts. Larvae were also light on barley, mixed grass and red clover pasture, and no-till corn. By June 6 "head-cutting" throughout the southern third of the State resulted in treatment of 70,000 acres. Treatments were applied to 25,000 acres of alfalfa and other forage crops. Armyworm damage to young no-till corn in OHIO was serious but localized through June and early July. Up to 4 larvae per plant infested 25-100 percent of the plants. In some cases all plants were destroyed. All outbreaks occurred in no-till fields, the heaviest in fields previously in sod.

Armyworm was regularly caught in blacklight traps in WISCONSIN by the first week of May, adults did not increase markedly until the first week of June with 840 caught June 3-10 at Antigo, Langlade County. Catches through June were moderate to heavy with eastern and northern sites taking the most. On June 27, potential problems in corn, small grains, and other crops were foreseen. Larval counts through July were heavy in scattered, grassy corn fields in the southern area, up to 12 per square foot in some pea fields, and light in lodged oats. About July 20, locally severe damage began in northern counties, beginning in Eau Claire County and quickly being found as far north as Washburn and Lincoln Counties and as far east as Marinette and Door Counties. Oats were hardest hit with 60 percent of the heads clipped in some fields. Corn in some older fields had all leaves stripped and a few late-planted fields were lost entirely. Controls were applied to many acres of peas in the west-central and north-central districts for larvae up to 50 per square foot. Counts were heaviest in fields with dense growths of grassy weeds, primarily quackgrass. Damage was most severe in Chippewa and Barron Counties. Parasitism by *Apanteles* spp. (braconid wasps) and *Winthemia* spp. (tachinid flies) was unusually light, but predacious ground beetles were numerous in some fields. Overall infestation in the northern areas was below economic levels. Many acres were treated unnecessarily, and in most cases, damage was not noticed or treatments were applied after damage had occurred. During the northern outbreak, about 19,000 acres of corn, 52,900 acres of small grains, 6,600 acres of alfalfa, 2,100+ acres of peas, and 30,000 acres of other crops were treated. After early August, only small numbers of larvae remained.

The armyworm outbreak in MICHIGAN was the most widespread and prolonged on crops statewide in July. Adults were first collected at the Lenawee blacklight station on April 14. Weekly counts at this station totaled 293 for May 20-26, increased to 556 the next week, but receded to 281 the week after that. Adults persisted through September.

Armyworm adults in VIRGINIA were flying in Montgomery County the week of April 4. During the week of May 9, the first larval outbreaks on small grains occurred on the Eastern Shore. By May 23, larvae had damaged grain in eastern Henrico County and more than 500 acres were sprayed. On May 30, outbreaks occurred throughout the Eastern Shore, but the small larvae caused little damage. Armyworms developed early at Virginia Beach. By June 5, larvae at 2 per plant infested 15 acres of corn in Washington County. Larvae in Amelia County reduced yields on 10 acres of barley by half and destroyed a field of young corn. By June 6, heavy counts in the Northern Neck area caused damage primarily to small grains, controls were applied to about 1,500 acres in Westmoreland County and 4,000 acres in Northumberland County.

Armyworm on wheat and barley in MARYLAND were well above normal. About 22,000 acres were treated on the Eastern Shore and yields were reduced by 2-10 percent. Injury became significant the third week in May and peaked the last week of May and first week of June. After barley matured and dried around the first week in June,

armyworms moved into an adjacent 10,000 acres of young field corn and heavily defoliated border rows. These acres were sprayed. Above normal counts on central area corn required controls on over 30,000 acres in June. Injury was heaviest in no-till areas of Frederick, Carroll, Montgomery, Howard, and Baltimore Counties. Damage and losses were minimized by extensive use of systemic controls. Armyworm larvae in NEW YORK ranged 6-10 per plant on no-till corn in Wyoming County July 11. Damaging populations were reported on corn in Steuben County and on no-till corn in Broome County. Armyworms appeared in NEW HAMPSHIRE about one month earlier than usual. Damage was light in the southern half of the State. Collected in MAINE blacklight traps the first week in June, adults peaked by the third week. Several corn fields were sprayed.

Spring migrants of ASTER LEAFHOPPER (*Macrosteles fascifrons*) were evident in NORTH DAKOTA by May 16 in Golden Valley (24 per 100 sweeps of winter wheat) and by May 30 in Bottineau County. By June 6, counts ranged 15-33 per 100 sweeps in Golden Valley, Grant, Morton, Stark, and Stutsman Counties. By June 13, migrants ranged 40-200 per 100 sweeps of rye and winter wheat in Grant, Adams, and Bowman Counties, and averaged one per linear foot of row on 2-inch flax in Adams County. By June 27, populations had increased to 250 per 100 sweeps on McKenzie County wheat. In early July, nymphs and adults ranged up to 560 (averaged 350) per 100 sweeps on Emmons County oats. Spring migrants in MINNESOTA appeared before grains had made much growth early in May. Although populations did not reach 1974 proportions, counts were heavy enough to damage some flowers and vegetables, mainly in home gardens.

~~Migrants were first detected in the southwest district of~~ WISCONSIN on April 30. On May 20 strong southerly winds dispersed significant leafhopper numbers of 0.2-1.0 per sweep statewide. The following week, adults increased to 2 per sweep in the southern and central districts and 6 per sweep in the west-central district. Late in May, populations were heavy and one percent of the migrant adults carried aster yellows disease. In June, adults moved from headed winter grain to more palatable crops, intensifying the problem for carrots and lettuce. In mid-June, up to 3 nymphs per 10 sweeps were found on Sauk and Marquette County grains, and 3.5 percent of the adults carried aster yellows. Aster yellows disease problems developed due to frequent spring rains washing chemical controls from crops and yellows-infected weeds providing a source of inoculum. Losses due to this disease exceeded 50 percent in some carrot and lettuce fields. In MICHIGAN, this pest transmitted aster yellows to 30-50 percent of some lettuce plantings at Stockbridge, Ingham County. Aster yellows was not serious in carrots, onions, or celery.

BEET LEAFHOPPER (*Circulifer tenellus*) in UTAH caused 90-percent loss of tomato plants through curly top disease in Washington County. Losses were heavy in Kane, Emery, Beaver, and Juab Counties, and moderate in Utah and Salt Lake Counties.

CORN EARWORM (Heliothis zea)^{RS} was unusually light on sweet and field corn in northern UTAH, and infestations were moderate to occasionally heavy in the southern area. Injury ranged light to moderate in the central area. Counts in IDAHO were much lighter and the damage period was shorter than in previous years. The first damage to newly emerged corn silk was noted July 14 at Parma, Canyon County. The first larvae on corn was found in an ear June 23 as compared with June 19, 1974. The first generation (150 larvae per 100 ears) reached 18 percent infestation instead of the norm of 100 percent. Infestations peaked on silking corn August 20 at Parma.

Corn earworm in WASHINGTON was very severe on untreated experimental corn. Damage to tassels of early planted corn was heavy at Royal Slope, Grant County. Treated corn plants showed unusually heavy damage, possibly due to poor timing. Corn earworm was earlier and heavier than normal in Yakima County.

The fall loss survey of field corn revealed kernel feeding losses were heavier in western KANSAS but about normal elsewhere. Kernel losses ranged from 1.1-2.9 percent in the east-central and north-central districts up to 2.9 percent for the south-central district. Heavy whorl infestations occurred mostly in the southwest district on corn and in the south-central district on sorghum. Heavily infested sorghum heads occurred in the southeast district with some found in the south-central and southwest districts. Corn earworm was unusually heavy on field corn in NEBRASKA. In mid-June, larvae infested up to 10 percent of the ears in some fields in Fillmore, York, and Hall Counties. By mid-August, infested ears ranged 90-100 percent in central and southeast districts. No controls were applied.

Heavy numbers in FLORIDA on sweet corn beginning in November were not effectively controlled at Homestead, Dade County. Larvae on sweet corn ears at Belle Glade, Palm Beach County, required controls during fall through spring. Counts were severe on untreated or poorly treated corn and sorghum at Hastings, St. Johns County. Larvae were a problem in sorghum heads in Alachua and Levy Counties during August and September. Counts were light in sorghum heads in Gadsden County and were lighter than in previous years in ears of field corn in the Panhandle area. Corn earworm was the number 3 pest of peanuts in Florida, causing about 12 percent of the total insect damage. Larvae first appeared in MISSISSIPPI on ears of corn in mid-June in Noxubee, Oktibbeha, and Grenada Counties with 92 percent of all ears infested. Increasing by July, larvae averaged one plus per ear in these counties. Corn earworm was the most important pest of field corn and grain sorghum in ALABAMA. A small acreage of corn was treated, but about 25,000 acres of grain sorghum were treated one or more times for this pest along with FALL ARMYWORM (Spodoptera frugiperda) and SORGHUM WEBWORM (Celama sorghiella).

Corn earworm adults in NORTH CAROLINA appeared on soybeans in the southern Coastal Plain July 28 to August 1. Heavy light trap catches and increased field activity August 4-8 indicated egg laying, but larval counts remained well below threshold (one larva per foot of row) in Wilson, Sampson, Johnston, Pitt, and Washington Counties. By August 11-14 in the southern Coastal Plain, second through fourth-instar larvae infested most open canopy blooming fields. Counts were light in the northern counties. About half of the 15 Sampson and Duplin County open canopy fields sampled were at threshold. The number of fields at threshold level peaked August 18-21 in the southern half of the State; 30 percent of the open canopy fields sampled in Montgomery, Anson, Sampson, and Wilson Counties were at threshold level (averaged 1.7 larvae per foot of row). Counts peaked in the northern half of the Coastal Plain August 25-28 with 30 percent of the fields at or above threshold. About half of the open canopy fields had economic populations of 15-20 larvae per 6 feet of row. Pupation greatly reduced the number of fields at threshold level in the southern half of the Coastal Plain September 2-4. During this period, surveys in Wilson, Edgecombe, Pitt, Martin, and Halifax Counties revealed that 90 percent of the larvae were in the last instar and the population was declining. Damage was over by September 12.

First taken in INDIANA by blacklight trap June 4, corn earworm adults were not taken in any numbers until early July. A loss of 0.028 percent occurred in only 2.5 percent of grain corn, probably due to early maturity of the corn. The Fall survey 93 percent of the larvae collected were this species. Adults first appeared in WISCONSIN in Fond du Lac County August 4, and soon thereafter at other southern sites. By early August, a few sweet corn fields were heavily infested, but timely controls were adequate. By late August adult flights became heavy at scattered sites. Corn earworm adults were not collected in MICHIGAN until August 6, and then no more until August 21. Blacklight trap collections for the past 2-3 years have been lighter than normal. Problems in the field were at a minimum.

Early instar larvae of corn earworm appeared in VIRGINIA on soybeans August 16 in Isle of Wight County. In late-planted soybeans, larvae averaged 15 per 30 row feet in 5 fields and 80 per 30 feet in another field. Adults peaked at 317 August 16 in a light trap at the Independent City of Suffolk. Adults averaging 130 per night between August 11-19, confirmed predictions of population levels in the coastal plain south of the James River. Populations remained light through August 27 in Accomac and Northumberland Counties. By August 10, larvae were active in Isle of Wight, Westmoreland, Charles City, James City, and Lancaster Counties. The following conditions (and larval averages per 30 row feet) were found in sampled fields in the stated counties for the rest of the year. By August 10, Charles City (1.3) and Westmoreland (0.25) were below treatment levels; Isle of Wight exceeded threshold in 5 of 16 fields, 3 were treated; controls were applied in Greensville and Southampton Counties. By September 4, Charles City (9.3) had one field reaching threshold; Westmoreland (3.4); pupation started in Isle of Wight; and controls were applied in Northampton and in southern Westmoreland.

On September 11, Charles City (10.3) had one field at threshold; Westmoreland (12.4) had 3 fields treated; James City (3.1) had none treated. On September 19, Charles City (3.4), and Northumberland and Lancaster County project fields (5.0) had none treated. Corn earworm larval populations were heavier than predicted for the Northern Neck, but only 8.4 percent of the acreage exceeded the threshold. By September 25, Charles City (1.8), Northumberland and Lancaster Counties (3.1) had none treated, and Westmoreland (2.5) had 4.5 percent of the acreage treated.

Significant egg laying by corn earworm in MARYLAND shifted from corn to soybeans between August 22 and 30. Heavy rains in July retarded buildup on corn and later, on soybeans. Counts averaged fewer than one per 20 feet of row on the Eastern Shore on September 3. Adult flights were heavy in southern Maryland and the Eastern Shore between September 1-6 and later. Several areas (300-400 acres) in Wicomico and Dorchester Counties reported 50 to 60-percent damaged pods by mid-September; other areas on the Eastern Shore had 1-2 percent injury. Feeding continued until late September and early October.

Corn earworm adults in NEW YORK were first caught in Suffolk County July 30 and in Hudson Valley and Ontario County August 23-29. Infestations were moderate in RHODE ISLAND on garden corn in northern and eastern areas in spite of no control materials. The first adults in NEW HAMPSHIRE, usually found the beginning of August, were collected on July 14. Larvae infested as many as 20 percent of the untreated sweet corn ears by August 1.

CORN LEAF APHID (*Rhopalosiphum maidis*) counts in NEW MEXICO were light on Chaves County barley as early as February 14. By February 21, corn leaf aphid was active on wheat and barley in Lea and Eddy Counties; honeydew became a problem as populations reached 100 per linear foot on Eddy County barley. By March 21, counts reached 500 per linear foot in Chaves and Eddy Counties with much leaf curl and yellowing. By April 1, counts decreased to 40 per linear foot in Curry County. Corn leaf aphid was heavy in UTAH in occasional corn fields in Box Elder and Salt Lake Counties and on barley in parts of Washington, Beaver, Millard, and Box Elder Counties.

Corn leaf aphid in OKLAHOMA infested sorghum from late May through August. Scattered heavy infestations occurred from mid-June to early August, mostly in the southwest, west-central and Panhandle counties. In KANSAS less sorghum and corn was treated in 1975 than in 1974; treatment was concentrated in the northeast and southwest districts. Corn leaf aphid ranged light to moderate on 20-100 percent of the sorghum in MISSOURI from mid-June to mid-July in the southwest, west-central, and north-central areas. Heavily infested fields developed high predator populations, mainly of lady beetles. The first damaging numbers appeared in IOWA on field corn in Dubuque and O'Brien Counties on July 27. By the week ending August 8, upper leaves on field corn were brown in Black Hawk, Grundy, Hamilton, Hardin, and Wright Counties. As damage continued, controls were applied in Butler, Black Hawk, Bremer, Grundy, Kossuth, and Story Counties the week ending August 15. This aphid was more of a problem in 1975 than in 1974.

For corn leaf aphid in ILLINOIS, about 51,000 acres were treated in 1975 compared with 201,000 acres in 1974. Infestations averaged 30 percent, ranged up to 100 percent, in sampled pretassel fields in central, east, west-southwest, and east-southeast districts. Infestations were heaviest in Mason County where all plants in several fields were infested, but counts were light. Counts in early August during a local drought in Ogle County were heavy but damage was light. The infestation in INDIANA of 7.19 percent on 2,550 stalks of grain corn by July 14-29, was the lightest since the survey began in 1972, probably due to early corn development. Aphids persisted longer than usual and were much heavier when suitable corn was available. Fall counts were similar to 1974 at 26.49 percent infestation. The negligible counts on grain sorghum were unusual and unexplained. A few small colonies of corn leaf aphid were observed on corn in WISCONSIN the last week of June. By August 1, counts were heavy, 500+ on 75 percent of older plants and 10 percent of younger plants, but only a small acreage was treated in spite of additional stress due to drought. Counts dropped by August 15, but some aphids persisted until October.

Corn leaf aphid in RHODE ISLAND was heavy on early planted field corn in Newport County in early August. Counts peaked in MAINE the week of August 22, a week earlier than in 1974. Counts sharply dropped 75 percent due to a fungus disease and 10 percent due to parasites. Counts equalled 1974, but damage was much more severe due to drought.

GREENBUG (*Schizaphis graminum*) in NEW MEXICO was active in Lea and Eddy Counties. By March 14, counts of 50-70 per linear foot infested Curry County wheat. This species and CORN LEAF APHID (*Rhopalosiphum maidis*) were economic on sorghum in Luna and Hidalgo Counties the week of June 27. In NEVADA this pest became economic on wheat for the first time in Pershing County in late July and early August and required treatment. Corn and milo in UTAH was damaged in Washington County.

Greenbug was widely distributed in OREGON on fall-seeded wheat in eastern counties near the Columbia River in the fall. Buildups, earlier than expected, severely damaged early seeded plantings and cover crops. Counts were heavy from Boardman to Hermiston in Umatilla County on irrigated and dryland wheat with early October populations up to 100 greenbugs per leaf. Light throughout Morrow County, damage was restricted to northern fields under irrigation. Dryland acreage treated was very small. Problems in Gilliam County were restricted to dryland fields seeded during early September; some fields were reseeded and about 7,000 acres were treated countywide. Infestations were light in Wasco County; 2 small fields near The Dalles needed treatment in mid-November. Counts were moderate to damaging in the most widespread infestation to date in eastern WASHINGTON in early fall. In most areas with light to moderate numbers, significant increases occurred later in the fall but did not achieve the damage potential expected due to cold, wet conditions in late fall favorable to wheat growth but detrimental to greenbug. Much spraying was undertaken in most eastern counties.

Greenbug ranged from light to moderate in OKLAHOMA on wheat in all areas through February. By mid-March counts up to 400 per linear foot were present in the southwest and northwest. Panhandle counties reached 5,000 per linear foot by mid-April. Counts of 300-400 per linear foot were found in scattered fields in the southwest and west-central areas through late March and early April. Many fields were treated in northwestern counties but only irrigated fields were treated in the Panhandle because of very dry conditions. Numbers declined in late April and disappeared by mid-May. Fall infestations began in early October in the southwestern area and became heavy (1,000 per linear foot) in the west-central area by late October. Counts continued to increase during November and early December, and were heavy in some areas in the west-central, north-central, central, and south-central counties by early December. Scattered fields in the north-central and west-central areas had 2,000-3,000 per linear foot in the first half of December. Some fields were completely destroyed. Statewide, populations and damage were heaviest for any fall in 20 years. Fields were treated as weather permitted. Infestations on sorghum were first reported in Texas County. From mid-July to mid-August, heavy counts, up to 5,000 per plant, infested the southwestern and west-central counties and were scattered through the western area. Counts declined in mid-August due to treatments and increased parasite and predator numbers.

Greenbug in ARKANSAS was generally light in 1975. In July during an extended dry period, aphid populations began to increase, but with more normal rains no economic infestations occurred. This species was found in Cross County for a new county record. This was the number one pest on small grains. In late 1974 and early 1975 the possibility of barley yellow dwarf virus disease alarmed growers of small grains. About 6,000-7,000 acres were treated for greenbug control, only about one percent of the total. Opinions stated that treatments were of doubtful value as aphid infestations were light and the disease was not widespread. Mid-November surveys showed the pest in all areas where small grains were grown. Counts ranged from trace up to 150 per row foot of drill on taller plants. Damage was light and few fields were treated.

Greenbug was serious on KANSAS grain sorghum. A large acreage was treated in 1975. During the first half of July, particularly bad infestations on seedling sorghum in the northeast and east-central districts due to heavy flights of winged greenbugs, made retreatment necessary. By late July, damage had occurred in some fields statewide. Rapid buildups occurred in central and western areas, particularly in the southwest due to treatment failures. Remaining infestations were destroyed by *Lysiphlebus testaceipes* (an aphidiid wasp) in the northeast and east-central areas by mid-August and in the rest of the State, by the third week of August.

Greenbug counts in southwestern MISSOURI of 1-16 per foot of row in 30 percent of the small grain fields checked, increased by early April to 1-30 per foot of row in 50 percent of the fields checked, and declined in the same month. A few fields of orchardgrass in the southwestern area had spot treatments applied by late April. Greenbugs in Missouri infested 3-100 percent of sorghum plants in southwestern, west-central, north-central, and northwestern areas during July. Some damage occurred in north-central and northwestern areas during a very dry period. By late

July, damage declined due to heavy populations of predators and parasites, and due to increased moisture. Greenbug was light on wheat in NEBRASKA in the southeastern area on May 9. Winged forms and early instars infested seedling sorghum in southeastern and central areas on June 12. Light counts during June on sorghum, began to increase in the first week of July. Lysiphlebus sp. parasitism was first detected in Pawnee County on June 24. On July 1, an average of 104 greenbugs per plant infested 4 sorghum fields in Gage and Jefferson Counties. Buildups continued during July and reached 2,500-3,000 per plant in some scattered fields in the central area. Counts in Clay County ranged up to 2,775 (averaged 242) per plant in 214 fields on July 22. Counts peaked about August 1-4 in the southeastern area and dropped suddenly due to parasitism by Lysiphlebus sp. Parasitism averaged 59 percent in Clay County and 100 percent in Saunders County on August 7. Both greenbugs and parasites developed and peaked about 2 weeks later to the west and north than in southeast Nebraska. Greenbugs damaged plantings of winter wheat during October and November in Adams, Webster, Kearney, Polk, and Hamilton Counties. Up to 500 greenbugs per foot of row and 25-100 percent stand loss were observed. Parasitism ranged 10-40 percent in infested fields. Treatment was withheld in several instances due to heavy parasitism.

In SOUTH DAKOTA greenbug was generally light on sorghum in the West River counties and was occasionally economic in the East River counties. Populations rarely reached economic levels on winter or spring wheat though present in most fields. Buildup was limited by the beneficial insect complex.

MELONWORM (Diaphania hyalinata) and some PICKLEWORM (D. nitidalis) built up rapidly on untreated squash at Homestead, Bade County, FLORIDA. Standard sprays were effective. During fall at Bradenton, Manatee County, more than 10 melonworms per plant defoliated and killed untreated melon plants, and defoliated and damaged cucumber fruit. D. nitidalis was primarily a problem in squash fruit at Bradenton during the spring; counts were moderate, 1-5 per 10 fruit.

POTATO LEAFHOPPER (Empoasca fabae) in NEBRASKA caused scattered economic damage, especially to first-year alfalfa in the north-eastern area. Damage and treatments were reported in Antelope, Cuming, Wayne, and Cass Counties. Damage to alfalfa in IOWA was severe. Damage was reported in 51 counties. Damaging numbers first appeared on June 26 on alfalfa in Story County. During the week ending July 4, damage increased in Lee, Union, and Washington Counties; counts of 17+ per sweep were noted. Damage increased the week ending July 11 in more than 12 counties across the State. New stands of alfalfa were severely stunted. Treatments were applied. By the week ending July 18, damage was statewide and was increased by a July drought. Rains in August, chemical treatments, and timely cuttings alleviated the potato leafhopper problem during early August.

Heavy counts of potato leafhopper appeared in south-central MINNESOTA as early as June 1 on alfalfa. The first and second cutting was taken before much damage occurred. Probably the most damage occurred in underseeded alfalfa where yields were occasionally reduced up to 50 percent. Potato leafhopper damage in NORTH CAROLINA continued to be important in peanut production, particularly in the northern counties of Gates, Chowan, and Hertford. In recent years, damage has appeared more frequently farther south on untreated light soils. A buildup in KENTUCKY began in early June. Counts of 800-900 per 100 sweeps on forage legumes were observed in the central area but little "hopperburn" was noted. Declining by early July, counts ranged 200-300 per 100 sweeps with more "hopperburn" than noted earlier.

Potato leafhopper first appeared in ILLINOIS in mid-May in Ogle County; counts ranged 0-95 (averaged 12) per 100 sweeps. Economic damage on second-growth alfalfa in the southern area began about mid-June. By June 24, one field in Clinton County had 20 adults and nymphs per sweep; other fields had 1-3 per sweep. Ogle County fields ranged 1-6 per sweep. By mid-July, counts were heavy on second and third-growth alfalfa in sampled fields statewide. Light to moderate economic damage continued into August in the northwest district. Nearly 78,000 acres were treated. Potato leafhopper in INDIANA was found in the southern area by June 16 and in the northern area by June 24. Counts remained economic until late August. The first potato leafhopper adults in OHIO appeared May 14 in Wayne County. Adults peaked at 9 per sweep on June 30. Heavy damage to alfalfa was widespread. Severe stunting and yellowing of the second growth occurred statewide during the first half of July. Counts then decreased with no additional yellowing after August 1.

Migrant adults were detected in southwestern WISCONSIN on Grant County alfalfa by May 13. Early counts ranged 0.4-1.0 adults per sweep in central, western, and southern counties. Reproduction was well underway in mid-June when adults and nymphs reached 12 per sweep in some alfalfa fields. Hot, dry weather resulted in heavy counts on second-growth alfalfa by late July. Counts were heaviest in the southwest area where some controls were applied; many fields in other areas were heavily infested. About August 1, counts averaged 25 per sweep; a few fields had 150+ per sweep and severe damage. Controls were applied in the south; over 25,000 acres were treated in the southwest district. Counts declined in mid-August due to cooler nights. Potato leafhopper was the most important insect on established alfalfa with possibly the heaviest populations in 20+ years in Wisconsin. Counts on potatoes and beans increased by mid-June to one adult per sweep in the central district. Late June counts were up to 2 per sweep on snap beans in the central district and 5 per sweep in the west-central district with nymphs increasing. Dry beans in the northwest and west-central districts were sprayed during July and August when counts exceeded 4 per sweep. Regular controls in July and August prevented further significant injury. Potentially damaging numbers on vegetables in MICHIGAN were controlled by early season soil systemics and various foliar applications.

Potato leafhopper damage in VIRGINIA ranged from moderate to heavy on alfalfa stubble in Shenandoah County by June 25. Moderate losses and widespread treatment occurred throughout the upper Shenandoah Valley. Damage appeared on alfalfa the second and third week of June in central MARYLAND. Damage levels peaked by mid-July statewide. One to two sprays were applied to about 20,000 acres on second to third cuttings. Population and damage levels were significantly higher in 1975 than in 1974. Counts of 50-100 per sweep were the highest levels encountered in some scattered fields. Potato leafhopper was most numerous in PENNSYLVANIA in the second half of July, and a major problem in the south half of the State in July and August. Treatments were necessary in most alfalfa fields in July. Counts ranged from a low peak of 2.1 per sweep in the northeastern area to a high of 52.0 per sweep in the southeastern area. Peaks averaged 2.5, 5.0, and 7.0 per sweep, respectively in the southwestern, west-central, and central areas.

Potato leafhopper activity in NEW YORK began June 10 in Ontario County and June 14 in Tompkins County. Early symptoms of "hopper-burn" were reported June 24. Serious damage was noted statewide by late July. Infestations in Tompkins and Tioga Counties appeared to be the heaviest in 35 years. Nymphs averaged one per sweep with severe stunting and yellowing in Dutchess County. This pest was severe on newly established seedlings, second-growth alfalfa, and trefoil in Broome County. Infestations were prevalent where conditions were dry in Oneida County. Damage was heavy on second growth in 2 fields in Steuben County. An early August survey in Columbia County found 2.5 potato leafhoppers per sweep of blooming second growth, 2 per sweep of 10-inch third growth, and 1.5 per sweep of 6-inch stubble. By late August, 0.2 nymph per sweep was collected on third-growth alfalfa where severe second-growth damage had occurred in Broome County.

SPOTTED ALFALFA APHID (Therioaphis maculata) was first active in NEW MEXICO in March on Eddy County alfalfa. Counts per 25 sweeps ranged up to 800 in Eddy and Chaves Counties by May 9, up to 200 in Dona Ana County during mid-May and 50-100 in Valencia and Bernalillo Counties during early September. Moderate to heavy counts in OKLAHOMA from late October to early December damaged newly planted alfalfa in some areas of the north-central, west-central, central, east-central, and south-central counties. Counts in KANSAS during mild, dry fall weather ranged from moderate to heavy in scattered alfalfa fields statewide; seedling stands were most affected. Controls were applied in Linn County. Counts were mostly trace in NEBRASKA. One field in Lincoln County was treated in August. Spotted alfalfa aphid first appeared in NORTH DAKOTA in June 13 in alfalfa in Sargent County but never became economic. Adams, Benson, Billings, Bottineau, Burke, Cavalier, Eddy, Golden Valley, Grand Forks, Grant, Hettinger, Mercer, Nelson, Oliver, Pembina, Ramsey, Renville, Slope, Stark, Towner, Traill, and Walsh Counties are new county records; 6 other new counties have been reported in 1975. This aphid appeared in PENNSYLVANIA in July in a Northampton County alfalfa field. It was found in 33 additional counties. Counts were generally fewer than 10 per 50 sweeps; the largest number was 164 in Snyder County.

TOBACCO BUDWORM (*Heliothis virescens*) emergence in FLORIDA was retarded by an early March cold snap. Crop infestation began in late April and early May, but control measures kept damage to a minimum start in cigar-wrapper tobacco. This species caused about 60 percent of the 1.3-percent loss of wrapper tobacco due to insects. Tobacco budworm was the second most important pest of flue-cured tobacco, causing about 24 percent of the total insect damage. On untreated tobacco at Live Oak, Suwannee County, infestations dropped from 74 percent on May 7 to 9 percent on July 16. This is the second successive year that infestations have declined on untreated flue-cured tobacco in Florida.

The first "hatch-out" of tobacco budworm in TENNESSEE occurred during the third week of June in Macon, Smith, Sumner, and Trousdale Counties. During the first week of July, surveys showed 14 of 22 tobacco fields at or above control levels; counts for that week ranged 0-769 larvae per acre. For the week ending July 11, all 21 fields surveyed were at or above control levels and counts ranged 154-1,300 larvae per acre. Counts continued at or above control levels in over half of the fields surveyed during July. During August, all untopped fields surveyed in the middle area were above control levels. Controls applied after topping were effective.

In NORTH CAROLINA, infestations by first to third instar larvae of tobacco budworm on 25-30 percent of the untreated tobacco in Bladen and Columbus Counties in mid-May, continued at this level until late May, and declined in early June. During May 26-29, of 250 fields surveyed, 25 percent of the early planted fields were at threshold, with 10-20 percent of the plants infested; 3 fields were completely infested. In Lenoir County of 180 fields, 25 percent were infested and 30 percent of the early planted fields were at or above threshold, with 2 fields reaching 80 percent. In Bladen and Lenoir Counties an average of 12-14 percent of the plants were infested and 8 percent of the fields were at threshold June 2-6; about 7 days later only 3 percent were at threshold.

TOBACCO HORNWORM (*Manduca sexta*) infestations in FLORIDA were on time and about as heavy as in 1974, making it again the principal pest. It was responsible for about 60 percent of the insect damage to flue-cured tobacco in the field. Tobacco hornworm damage in NORTH CAROLINA was restricted to late-transplanted tobacco. Fields at or exceeding the threshold level were found during late August in 20 percent of 70 Lenoir County fields and 14 percent of 140 Bladen County fields.

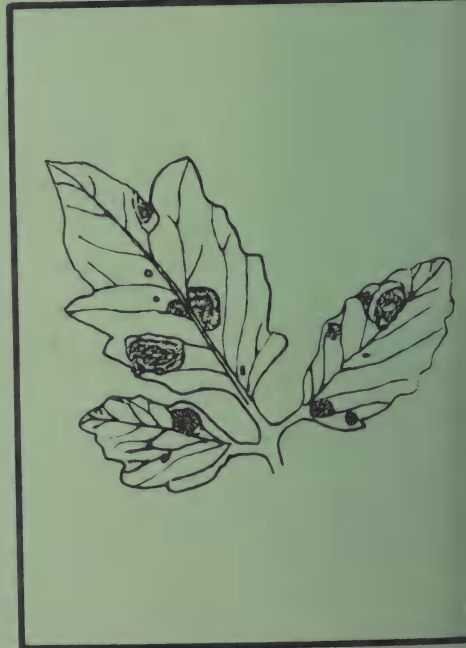
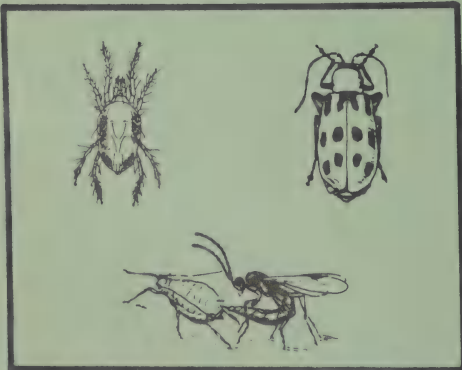
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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

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COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM economic in scattered fields of lima beans and soybeans in Maryland. (p. 669).

SPCTTED ALFALFA aphid heavy on alfalfa in Kansas. (p. 669).

EUROPEAN CORN BORER fall infestation survey showed population decrease in North Dakota. (p. 670).

FALL ARMYWORM continued to be a problem on late sorghum and corn, oats, and pastures in Mississippi. Damaged sorghum in Florida. Heavy infestations damaged pastures, small grains (p. 670), hay, and soybeans in Arkansas. Serious on seedling alfalfa in Kansas. (p. 671).

A PLATYSTOMATID FLY potential pest of soybeans detected feeding in nodules in North Carolina, 1977 survey planned. (p. 672).

GRASSHOPPERS nearing economic threshold on citrus in Florida. (p. 674).

Additional DUTCH ELM DISEASE positive vectors and trees found in CALIFORNIA. (p. 677).

Second native female MEXICAN FRUIT FLY and fourth male ORIENTAL FRUIT FLY trapped in California. (p. 677).

Detection

SOYBEAN CYST NEMATODE is a new State record for Texas. (p. 671).

For new county records see page 677.

Special Reports

Summary of Insect Conditions in the United States - 1975.
Corn, Sorghum, Sugarcane (pp. 683-695).
Small Grains (pp. 695-697).
Turf, Pastures, Rangeland (pp. 697-699).
Forage Legumes (pp. 700-711).
Peanuts (pp. 711-712).

Imported Fire Ant Quarantines (map). Centerfold.

Reports in this issue are for the week ending October 1 unless otherwise indicated

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

CORN EARWORM (Heliothis zea) - SOUTH CAROLINA - Heavily infested approximately 2 acres of lima beans in Bamberg County, damage moderate to heavy. Controls inadequate (3 applications) as of September 21. (McAlhany). VIRGINIA - Larval average per 30 row feet of soybeans by county: Richmond 3.2 in 17 fields (537 acres); Lancaster 0.8 in 5 fields (161 acres); Westmoreland 1.3 in 39 fields (762 acres). No treatments needed. (Allen). MARYLAND - Egg laying near zero, blacklight trap catches 0-10 per night statewide. Larvae mostly late instars, economic in scattered Kent and Caroline County lima bean fields and Queen Annes and Talbot County soybeans. (U. Md., Ent. Dept.). NEW HAMPSHIRE - Larvae still feeding in ears of field corn throughout southeastern area. May be offspring of adults still migrating into State from farther south. (Turmel).

CORN LEAF APHID (Rhopalosiphum maidis) - SOUTH DAKOTA - Heavy on winter wheat in Pennington, Lyman, and Tripp Counties. (Walgenbach).

GREENBUG (Schizaphis graminum) - TEXAS - Light on grain sorghum in El Paso, Hudspeth, Pecos, and Reeves Counties, 4-10 per colony on less than 10 percent of foliage. (Neeb). KANSAS - Winged and immatures averaged about 2 per plant on 10 percent of 3 to 4-inch volunteer wheat in Pottawatomie County. Trace on grain sorghum in Saline and Pottawatomie Counties. None on wheat in Cheyenne, Rawlins, Sherman, and Thomas Counties. (Bell). SOUTH DAKOTA - Light on winter wheat in Lyman County, 2-6 per terminal, one alate female per 10 plants. Trace at Wall, Pennington County. (Walgenbach).

SPOTTED ALFALFA APHID (Therioaphis maculata) - KANSAS - Heavy, averaged 300 per sweep and 10-20 per trifoliate leaf on 5-inch alfalfa, near Lafontaine, Wilson County. Averaged 40 and 60 per sweep in two 8 to 9-inch fields in Wilson County and 15 per sweep in 10-inch alfalfa in Anderson County. (Bell).

TOBACCO BUDWORM (Heliothis virescens) - ARKANSAS - Caused up to 50 percent pod damage on Bragg variety of soybeans planted in July in southeast fields. (Wall).

CORN, SORGHUM, SUGARCANE

DISEASES

FUJIKUROI ROT (Gibberella fujikuroi) - NEW MEXICO - Caused root and basal rot of sorghum after 3 days of rain northwest of Tucumcari, Quay County. Up to 50 percent of stalks lodged. (NM Coop. Rpt.).

SORGHUM LEAF RUST (Puccinia purpurea) - KANSAS - Infected 100 percent of sorghum plants in one Wilson County field, infections moderate to heavy. (Sim).

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - KANSAS - Infested 60 percent of whorls in 5-foot forage sorghum in Pratt County. Infested 12 percent of whorls in 18-inch sorghum in McPherson County; most larvae very small. (Bell). MISSISSIPPI - Larvae continued problem on late planted sorghum and corn week ending September 23. Averaged 85 percent infestation on 200 acres of sorghum in Lawrence County. (Mitchell). FLORIDA - Damaged 200 acres of sorghum in Marion County; in 50 acres, 30 lost due to control failure. Infested 30 percent of sorghum plants on 40 acres near Chiefland, Levy County. (FL Coop. Sur.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH DAKOTA - Fall infestation survey showed decrease over 1975. Average percent plants infested 1975-1976 (and average borers per 100 plants 1975-1976) by county: Cass 47-43 (5-15), Dickey 69-34 (34-26), Ransom 51-42 (30-68), Richland 51-38 (40-20), and Sargent 65-39 (42-13). Southeast district averages based on totals of all 50 fields sampled 56-39 (42-13). (Scholl). MARYLAND - Blacklight trap catches zero in lower Eastern Shore traps, averaged 5 per night in upper area. (U. Md., Ent. Dept.).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Infested about 50 percent of cornstalks; less than 3 percent girdled in 130-acre corn field in Dallam County. (Jackman).

CHINCH BUG (Blissus leucopterus leucopterus) - KANSAS - Averaged 20-39 per plant on grain sorghum near Elmo, Dickinson County. (Bell).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Moderate heavy on grain sorghum in Pecos, Reeves, and Hudspeth Counties. Light in El Paso County; leaf damage moderate in 2 fields at Tornillo. (Neeb, Burgess). Damaged field of late corn in Dallam County. (Patrick).

SMALL GRAINS

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Heavy still, damaged small grains statewide. (Jones). KANSAS - Some infestations in sown and volunteer wheat, larvae very small and mostly feeding in whorls. On sown wheat in Harper County, 15 per square foot infested 10 percent of one-inch wheat in Sumner County, some in sown wheat in Reno County. Percent infestation on volunteer wheat plants by county: Pottawatomie 50, Riley 10, and McPherson 25. In volunteer fields near Pretty Prairie, Reno County, 4-6 per square foot. (Bell). MISSISSIPPI - Heavy on oats in Amite County week ending September 23. (Mitchell).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Heavy still, damaged pastures and lawns statewide. (Jones). MISSISSIPPI - Continued problem on winter-grazing grasses week ending September 23. (Mitchell).

SOUTHERN CHINCH BUG (Blissus insularis) - CALIFORNIA - Adults collected on St. Augustinegrass at Calistoga, Napa County, by H.A. Stabo, September 10, 1976. Determined by A. Hardy. This is a new county record. (CA Pest Rpt.).

FORAGE LEGUMES

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Heavy, still damaged hay fields statewide. (Jones). KANSAS - Serious on one-inch seedling alfalfa in Pottawatomie County, ranged 1-7 (averaged 4) per square foot. Most larvae very small, some eggs found. Infestations none to very light in established stands in Riley, Pottawatomie, Leavenworth, Jefferson, Atchison, Shawnee, Wilson, Allen, Anderson, Kingman, Pratt, Harvey, McPherson, and Saline Counties. (Bell).

ALFALFA WEEVIL (Hypera postica) - WISCONSIN - Collected on alfalfa at Nelma, Forest County, at Eagle River, Vilas County and at Florence, Florence County, by M.S. Conrad, August 11, 1976. All determined by D.R. Whitehead. These are new county records. (WI Pest Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Light to moderate on alfalfa and red clover in north-central and northwest areas. Range per 10 sweeps 0-11 on alfalfa and 3-19 on red clover. (Munson).

PEA APHID (Acyrtosiphon pisum) - TEXAS - Increased on alfalfa in Pecos, Reeves, and El Paso Counties. (Neeb)*.

SOYBEANS

DISEASES

SOYBEAN CYST NEMATODE (Heterodera glycines) - TEXAS - Moderate to heavy on roots of soybeans in Bowie, County. Collected and determined by L. Smith, September 20, 1976. Confirmed by W.H. Thames. This is a new State record. TENNESSEE - Collected from infested 20-acre soybean field in Shady Grove Community off Lock Six Road, Trousdale County, by S. Gregory September 21, 1976. Determined by R. Harrison. This is a new county record. (Gordon, Bruer).

INSECTS

BEE T ARMYWORM (Spodoptera exigua) - ALABAMA - This species and SOYBEAN LOOPER (Pseudoplusia includens) damaged soybeans in eastern Geneva County; several fields treated. (Stephenson).

FALL ARMYWORM (Spodoptera frugiperda) - ARKANSAS - Heavy still, damaged some soybean fields statewide. (Jones).

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - ARKANSAS - Caused up to 40 percent foliage loss in some southeast soybean fields. (Wall).

BOLLWORMS (Heliothis spp.) - MISSISSIPPI - Heavy infestation on late-planted soybeans in De Soto County. Population one per row foot, controls applied. Several area problems due to migration from cotton. (Jarratt).

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Larvae and adults heavily damaged 10-acre field of medium-late soybeans at Crossville, DeKalb County. Other nearby fields not damaged. (Smith). VIRGINIA - Average per 30 row feet of soybeans by county: Lancaster 7.4 in 5 fields (161 acres); Westmoreland 10.4 in 39 fields (762 acres), average defoliation 15.3 percent; Richmond 9.3 adults and larvae in 17 fields (537 acres), average defoliation 11.6 percent. Populations still light due to extensive CORN EARWORM (Heliothis zea) treatment. (Allen). MARYLAND - Isolated fields in Wicomico, Worcester, Somerset, and Queen Annes Counties with heavy adult populations; little yield loss expected due to crop maturity. (U. Md., Ent. Dept.).

A PLATYSTOMATID FLY (Rivellia quadrifasciata) - NORTH CAROLINA - This potential pest of soybeans detected by J. Van Duyn and identified by D.L. Stephan in Washington and Hyde Counties. Close examination of roots revealed larval feeding in nodules of some plants. Comprehensive survey in 1977 planned to determine extent of larval damage. (Van Duyn, Hunt).

PEANUTS

INSECTS

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - FLORIDA - Problem in 50 acres of late-planted peanuts at Chiefland, Levy County; treatment required. (FL Coop. Sur.).

COTTON

INSECTS

BOLLWORMS (Heliothis spp.) - TEXAS - TOBACCO BUDWORM (H. virescens) light on cotton across Trans-Pecos area. BOLLWORM (H. zea) eggs and larvae averaged 3-4 per 100 terminals in El Paso Valley. (Neeb, Burgess). LOUISIANA - Heliothis spp. larvae still present in many cotton fields. Adults laying eggs on green cotton, attracted to new growth that had "cut out" as well as stayed green during dry period. Population 70-100 percent H. virescens. (Tynes). ARKANSAS - On untreated cotton in Ashley County, 23 of 25 Heliothis spp. larvae feeding on regrowth foliage were H. virescens (Wall). MISSISSIPPI - Eggs 5-25 percent in green cotton in hill section counties week ending September 23. Most harvestable cotton beyond damage. (Anderson). Currently, Heliothis spp. larvae fed on harvestable bolls in Winston County. Some economic loss. (Mitchell).

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Adults 480+ in 4 days in one pheromone trap at San Angelo, Tom Green County. More adults taken in St. Lawrence area than ever before. (Bohmfolk et al.). LOUISIANA - Reproducing in large numbers in some fields. Diapause applications needed every 10 days until food exhausted. (Tynes). ARKANSAS - Few adults still active in fields in northeast area; entering diapause. (Kimbrough). MISSISSIPPI - Damaged squares increased week ending September 23, adults prevalent in blooms. Most harvestable bolls beyond damage. Some diapause controls applied in hill section. (Anderson). TENNESSEE - Most adults in diapause. All squares and small bolls surveyed were punctured. (Locke).

CABBAGE LOOPER (Trichoplusia ni) - CALIFORNIA - Larvae increased on cotton and moved into seedling lettuce fields in Imperial Valley, Imperial County. Previous control by insecticides poor. (CA Pest Rpt.).

POTATOES, TOMATOES, PEPPERS

INSECTS

BLACK CUTWORM (Agrotis ipsilon) - RHODE ISLAND - Averaged 2-3 percent infestation in harvested potato tubers in Washington County, heaviest in at least 5 years. (Partyka).

BEANS AND PEAS

INSECTS

MEXICAN BEAN BEETLE (Epilachna varivestis) - MASSACHUSETTS - Larvae and adults common on late green and yellow beans in Hampden County. Foliage heavily skeletonized, numerous edible beans damaged by feeding. (Adams).

COLE CROPS

INSECTS

CABBAGE LOOPER (Trichoplusia ni) - TEXAS - Severe problem on cabbage, broccoli, and other garden crops in south-central area. (Cole). DELAWARE - This species and IMPORTED CABBAGEWORM (Pieris rapae) very heavy on broccoli and cabbage in one area of New Castle County. (Burbutis, Kelsey).

CUCURBITS

INSECTS

BERTHA ARMYWORM (Mamestra configurata) - WASHINGTON - This species and WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) heavy, up to 20 per runner; defoliated commercial field of pickling cucumbers at Terrace Heights, Yakima County. (Mayer).

DECIDUOUS FRUITS AND NUTS

INSECTS

WALNUT CATERPILLAR (Datana integerrima) - TEXAS - Activity moderate to heavy on pecans in Terrell and Pecos Counties, light in Glasscock County. (Neeb).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Activity light to moderate on pecans in El Paso, Terrell, Glasscock, Brewster, Jeff Davis, and Upton Counties. (Neeb).

HICKORY SHUCKWORM (Laspeyresia caryana) - TEXAS - Very heavy on pecans from Brazos County to gulf coast. Heavy on unsprayed trees in Terrell County. Light in Glasscock and Pecos Counties. (Cole, Neeb).

PECAN WEEVIL (Curculio caryae) - MISSISSIPPI - Adult emergence continued in pecan orchards in Panola and Wilkinson Counties; some damage occurred. (Anderson).

YELLOW PECAN APHIDS (Monellia spp.) - TEXAS - Light to moderate 0-15 per compound pecan leaf, on 75-85 percent of foliage in El Paso, Hudspeth, Terrell, Glasscock, Brewster, Jeff Davis, Upton, Pecos, Reeves, Ward, Ector, and Midland Counties. (Neeb).

BLACK PECAN APHID (Tinocallis caryaefoliae) - TEXAS - Severely damaged untreated pecan groves in Milam and Williamson Counties. Light in Pecos, Reeves, and El Paso Counties. Light to moderate, primarily in home landscapes, in Brewster, Jeff Davis, and Terrell Counties. (Cole, Neeb).

CITRUS

INSECTS

GRASSHOPPERS - FLORIDA - Chewing leaves on young commercial citrus and on foliage of mature round-type oranges along east coast from Ft. Pierce, St. Lucie County, to Merritt Island, Brevard County, and along ridge citrus district. Population nearing economic threshold. (FL Coop. Sur.).

SMALL FRUITS

INSECTS

BET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae heavy on grapevines at Talmage, Mendocino County. (CA Pest Rpt.).

WESTERN GRAPELEAF SKELETONIZER (Harrisina brillians) - NEW MEXICO - Heavily defoliated grapes in Roswell area, Chaves County. (NM Coop. Rpt.).

ORNAMENTALS

INSECTS

FALL WEBWORM (Hyphantria cunea) - CALIFORNIA - Larvae very heavy on fruitless mulberry at Williams, Colusa County. (CA Pest Rpt.).

WALNUT CATERPILLAR (Datana integerrima) - MISSISSIPPI - Unusual feeding on azalea in Winston and Pontotoc Counties. (Cochran).

FOREST AND SHADE TREES

DISEASES

ELM PHLOEM NECROSIS VIRUS - MISSISSIPPI - Continued to infect elms in Oktibbeha County and many other counties in State. Most infected trees cut down. (Anderson).

INSECTS

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - CALIFORNIA - Larvae 4 per tip on Pinus radiata (Monterey pine) at Lakeside, San Diego County, and other pines at El Cajon, San Diego County. Nursery pines infested at La Mesa, San Diego County. (CA Pest Rpt.).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - MISSISSIPPI - Collected on Pinus taeda (loblolly pine) near Louisville in Tombigbee National Forest, Winston County, by C. Hays September 2, 1976. Determined by T.E. Nebeker. This is a new county record. Infestations also found in Oktibbeha and Itawamba Counties. (Nebeker, Lashomb).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - RHODE ISLAND - Infested small commercial forest blocks of red, white, and scotch pines statewide. Mortality 10 percent in one 13-acre block of white pine. (Holt, Bergey).

FALL WEBWORM (Hyphantria cunea) - NEW HAMPSHIRE - Webs very heavy in forest and shade trees along Connecticut River at West Chesterfield and Westmoreland, Cheshire County. Defoliation 20-100 percent in favored species. (Burger).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - WISCONSIN - Collected on American elm at Eau Claire, Eau Claire County, by F.S. Morse March 19, 1976. This is a new county record. Determined by D.M. Anderson. (WI Pest Sur.).

ELM LEAF BEETLE (Pyrrhalta luteola) - TEXAS - Moderate on Siberian elm trees in Glasscock, Pecos, Reeves, Brewster, Jeff Davis, Culberson, and El Paso Counties. (Neeb).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - TEXAS - Moderate to heavy on cattle in Brewster, Jeff Davis, Winkler, Terrell, Pecos, and Crockett Counties. (Neeb). ALABAMA - Ranged 100-500 per animal in 10-head beef cattle herd in Lee County. (McQueen). NEW HAMPSHIRE - Averaged 50 per animal on dairy cattle in West Chesterfield, Cheshire County, and Langdon, Sullivan County. (Burger).

FACE FLY (Musca autumnalis) - TENNESSEE - Ranged 0-4 per head on cattle in Trousdale County. (Gregory, Gordon). ALABAMA - Ranged 2-15 on 50 percent of beef cattle in 100-cow herd at Loachapoka, Lee County. (McQueen). NEW HAMPSHIRE - Averaged 10-20 per face on dairy cattle at Westmoreland, Cheshire County. (Burger).

STABLE FLY (Stomoxys calcitrans) - NEW HAMPSHIRE - Averaged 10 per animal on dairy cattle at West Chesterfield, Cheshire County. (Burger).

HORSE BOT FLY (Gasterophilus intestinalis) - NEW MEXICO - Eggs of this species and others heavy on horses. Infestation on upper flanks in some cases indicating unusually heavy population. Internal treatments needed in 6-8 weeks in Las Cruces, Dona Ana County, area. (NM Coop. Rpt.). MISSISSIPPI - Eggs moderate on horses in Bolivar County. (Mitchell).

A MOSQUITO (Culex quinquefasciatus) - MISSISSIPPI - Adults still present but decreasing. In Oktibbeha County, 55 adults trapped in rural areas and 15 in urban areas September 28. (Bertsch).

BROWN DOG TICK (Rhipicephalus sanguineus) - NEVADA - Heavy at 2 residences at Reno, Washoe County. (Ting).

WESTERN BLACK WIDOW SPIDER (Latrodectus hesperus) - NEVADA - Heavy populations entered residences and other buildings in southern Washoe County. (Bechtel).

HOUSEHOLDS AND STRUCTURES

INSECTS

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) - MAINE - Very well established at several residences in southern York County. Extensive repair to house and barn required at estimated cost of \$5,000. (Gall).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

A CHALCID WASP (Brachymeria ovata) - NEW MEXICO - Parasitized 37 percent of Hemileuca oliviae (range caterpillar) pupae in area southeast of Clayton, Union County. (NM Coop. Rpt.).

FEDERAL AND STATE PROGRAMS

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - CALIFORNIA - Positive Scolytus multistriatus (smaller European elm bark beetle) adults of Dutch elm disease find in Palo Alto. Presence of diseased brood Clara County, 2 elm trees confirmed positive. Tree removal underway. Infected S. multistriatus adults confirmed from original area Dutch elm disease find in Palo Alto. Presence of diseased brood wood or additional diseased trees as yet undetected. (CA Pest Rpt.).

INSECTS

MEXICAN FRUIT FLY (Anastrepha ludens) - CALIFORNIA - Second nonsterile (native) fruit fly trapped at Imperial Beach, San Diego County. Female showed no dye markings and ovaries seemed normal. Saturation trapping in area underway. (CA Pest Rpt.).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Fourth specimen trapped in Steiner trap at Venice, Los Angeles County. Adult male trapped on same property as second catch. Fruit collection underway in areas of finds. (CA Pest Rpt.). Eradication treatments being applied. (PPQ).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Larvae migrating near Duran, Torrance County; some activity as far as Encino. (NM Coop. Rpt.).

RED IMPORTED FIRE ANT (Solenopsis invicta) - ARKANSAS - Collected from mound at McGehee, Desha County, by M.L. Wall September 16, 1976. Determined by E.P. Rouse. This is a new county record. (Boyer)

DETECTION

NEW STATE RECORD

DISEASES

SOYBEAN CYST NEMATODE (Heterodera glycines) - TEXAS - Bowie county. (p. 671).

NEW COUNTY RECORDS

INSECTS

ALFALFA WEEVIL (Hypera postica) - WISCONSIN - Forest, Vilas, Florence (p. 671).

RED IMPORTED FIRE ANT (Solenopsis invicta) - ARKANSAS - Desha (p. 677).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - WISCONSIN - Eau Claire (p. 675).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - MISSISSIPPI - Winston (p. 675).

SOUTHERN CHINCH BUG (Blissus insularis) - CALIFORNIA - Napa (p. 671).

HAWAII PEST REPORT

General Vegetables - DIAMONDBACK MOTH (Plutella xylostella) infestations and damage generally light to moderate at Volcano, Kamuela, and Lalamilo, Hawaii Island. Infestations heavy (1-15 larvae per plant) on all cabbage heads in one-acre planting at Lalamilo, moderate (1-5 larvae per plant) on 75 percent of 3 acres of broccoli and 6 acres of head cabbage at Volcano. Light (1-2 larvae per plant) on 10-20 percent of 2 acres of daikon at Kamuela and 6 acres of head cabbage and 5 acres of Chinese cabbage at Volcano, Kamuela, and Lalamilo. Heavy damage (21 days old) on Chinese and head cabbage plantings at Lalamilo and Volcano. Moderate to heavy infestations of LEAFMINER FLIES (Liriomyza spp.) on 4 acres of watermelon at Kahuku, Oahu, and 3 acres of tomatoes (50-80 percent of leaves heavily mined) at Pulehu, Maui, and Kalopa, Hawaii. Infestations were light on 0.25 acres of tomato at Kohala, Hawaii. Adults of Diglyphus begini (a eulophid wasp), parasite of the leafminer, activity heavy in planting at Kalopa. (Joseph et al.). GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) infestations heavy (60 percent of leaves heavily colonized) on 0.50 acre of tomato at Kalopa, Hawaii. Infestations light on 2.50 acres of tomato at Pulehu, Maui, and Kalopa. (Lai et al.). WESTERN FLOWER THRIPS (Frankliniella occidentalis) infestations moderate (2-5 per head on 50 percent of plants) on 0.25 acre of head lettuce at Kamuela, Hawaii. Infestations light on one acre of Romaine lettuce and on blossoms of weedy morningglory vine at Lalamilo, Hawaii. (L. Nakahara).

Fruits and Nuts - MEDITERRANEAN FRUIT FLY (Ceratitis capitata) and ORIENTAL FRUIT FLY (Dacus dorsalis) activity heavy (adults 1-3 on 50 percent of fruits) on backyard orange plantings at Kamuela, Hawaii. (L. Nakahara).

CORRECTIONS

CPPR 1(36):593 MONTANA - SUGARBEET ROOT MAGGOT ... delete entire entry. (Jensen).

LIGHT TRAP COLLECTIONS

[illegible]

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

	<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Leptosphaeria</u> sp. a rust	uredial	on leaves of <u>Dracaena</u> plants	Los Angeles	Japan	MO
<u>Phyllosticta</u> sp. a rust	uredial	on leaves of <u>Dracaena</u> plants	Los Angeles	Japan	MO
<u>Dacus dorsalis</u> Hendel oriental fruit fly	adult	with cut flowers from baggage	Hawaii	Hawaii	CA
<u>Hylobius abietus</u> (Linnaeus) a curculionid beetle	adult	in wood crate containing slate	Port Everglades	Spain	FL
<u>Parlatoria blanchardi</u> (Targioni-Tozzetti) parlatoria date scale	adult	on palm leaves	New York	Israel	USA
<u>Rhagoletis cerasi</u> (Linnaeus) a tephritid fly	larval	in cherries from baggage	Boston	Italy	USA
<u>Tomicus piniperda</u> (Linnaeus) a scolytid beetle	adult	infesting 5 tons of wood dunnage	Detroit	Netherlands	USA
<u>Helicella cretica</u> (Ferussac) a snail	adult	on pallets of military cargo	Dover	Turkey	PA

WEATHER OF THE WEEK ENDING OCTOBER 3

Reprinted from Weekly Weather and Crop Bulletin supplied by the National Weather Service, NOAA.

HIGHLIGHTS: Rains dominated the week's weather picture. Flash flood alerts and activity prevailed along the western coast States and in the Atlantic Coast States. Frost and freeze warnings occurred in several States, while snow moved into Colorado's higher elevations.

TEMPERATURES AND PRECIPITATION: A large high pressure center over South Dakota spread cool air across the Nation's interior on Monday. The advancing cool air activated showers and thunder-showers along the Atlantic and gulf coasts and in the southern Plains States. During the day, snow fell in some of the higher Colorado elevations. More than 6 inches accumulated at Wolf Creek Pass and around 5 inches at La Veta Pass. The showers and cool air mass held afternoon temperatures in the 40's over parts of eastern New Mexico and northeastern Texas. Severe weather included a thunderstorm, with golf-ball sized hail, near Prescott, Arkansas. Another weather system off the Pacific coast activated a few showers in western Oregon and northern California. Temperatures in the northwest ranged in the 70's and 80's. Tuesday morning temperatures made new record lows, as the high pressure system cooled the Nation's midsection. Sioux Falls, South Dakota, recorded a mere 24 degrees, while readings ranged from the mid to upper 20's and the 30's across the upper Great Lakes area and into the northern and central plains. Two low pressure centers combined to cause showers and a few thundershowers in California. A few widely scattered showers extended across central and southern Nevada, southwestern Utah, and northern Arizona. Showers and thundershowers also moved over the lower Mississippi Valley and along the eastern gulf and southern Atlantic coasts. Northwestern Ohio and sections of western Pennsylvania received frost warnings for Tuesday night.

Dawn broke Wednesday to temperatures in the 30's and 40's over most of the northern half of the Nation, the central Rockies, and northwestern Texas. Temperatures plunged into the 20's and 30's in Vermont, the Adirondack Mountains, and some portions of the central Rockies. Notable lows included Bradford, Pennsylvania, 26 degrees, Portland, Maine, 31 degrees, Salina, Kansas, 34 degrees, and Amarillo, Texas, 42 degrees. A low pressure system just off the southern California coast produced rains which necessitated area flash flood watches. Locally heavy rains totalled more than 4 inches at Lake Isabella, about 30 miles northeast of Bakersfield. Showers and thundershowers also pushed from the middle Mississippi Valley to the lower Ohio Valley, eastward through the Carolinas, the southern Appalachians, the southern Atlantic Coast States, and southward to the gulf coast. Sunny skies and cool temperatures greeted most of the Nation on Thursday morning. Readings in the 20's and 30's dominated the northern part of the country, while 70's and 80's prevailed in the southern section. As the day progressed, cloudiness slowly increased along the west coast. Rain and drizzle prevailed over southern New England, the middle Atlantic States, and the Appalachians, as showers and thundershowers extended into the Carolinas and the Florida peninsula. Millville, New Jersey, reported about 1.5 inches of rain in a 6-hour period, while Tampa, Florida, received just over one inch.

The temperature at North Platte, Nebraska, rose from a morning low of 33 degrees to an afternoon high of 88 degrees, while Phoenix, Arizona, scored 101 degrees for the Nation's high. Storms converged on the southwestern sector of the Nation on Friday and caused flash flood alerts. As tropical storm Liza moved over northern Mexico, she spread additional moisture into the southwestern United States. Santa Barbara, California, reported almost 2.5 inches in a 6-hour period, while Ely, Nevada, noted about 0.5 inch for the afternoon. A heavy snow watch was posted for Colorado's higher elevations. Besides moist weather in the West, a few showers lingered over New Jersey, Maryland, and the interior of California. The weekend brought much rain and flash flood watches and activity in the far western States as well as the Atlantic Coast States. A summery weather pattern continued over the Nation's midsection. Kansas City, Missouri, reported a record high temperature of 95 degrees on Saturday, as other warm readings prevailed over eastern Kansas, western Missouri, eastern Oklahoma, and parts of Arkansas. Winter weather returned to the western third of the United States on Sunday, as a cold front moved into the county from Canada. The Colorado Rockies noted snow accumulations of up to 6 inches, while freeze warnings prevailed in Montana and Idaho.

NATIONAL WEATHER SERVICE 30-DAY OUTLOOK

OCTOBER 1976

The National Weather Service's 30-day outlook for October is for temperatures to average above seasonal normals from the northern Plateau through the upper Great Lakes and also along the central and south Pacific coast. Below normal temperatures are indicated from the southern Plateau eastward through the southern Great Plains to the south Atlantic coast. In unspecified areas near normal temperatures are in prospect. Precipitation is expected to exceed the median amount in most areas west of the Continental Divide as well as from the southern Great Plains to the south Atlantic coast. Elsewhere less than the median value is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1975
(Continued from page 666)

CORN, SORGHUM, SUGARCANE

Highlights: EUROPEAN CORN BORER was somewhat heavier in Kansas in 1975, and economic in all major Missouri corn districts. The fall abundance survey showed a general increase over 1974 in several States. Summer population in Kentucky was the lightest since the survey began. Overwintering populations in Illinois were twice those in 1974. Counts were generally below economic threshold in Ohio but very numerous on Delaware corn in September. FALL ARMYWORM caused 50 percent loss of corn and sorghum in Mississippi, and was the principal pest of corn in Florida. Economic damage on sorghum in all areas of South Carolina peaked at 75 percent infestation on no-till sorghum in North Carolina. SOUTH-WESTERN CORN BORER was a serious pest of Kansas corn; continued its movement into uninfested areas of Kentucky. BLACK CUTWORM was heavier in 1975, infestations were the most extensive in recent years in South Dakota, Illinois, and Iowa. CORN ROOTWORMS populations increased with control problems and extended ranges in several States.

EUROPEAN CORN BORER (*Ostrinia nubilalis*) infestations in corn were somewhat heavier than in 1974 throughout KANSAS and particularly in the northeast, east-central, south-central, and northwest districts. The first adult of the season in MISSOURI was trapped on May 19. Egg masses ranged 2-3 per 100 plants in mid to late May in the central and northern corn growing areas. A few economic infestations occurred in all major corn growing areas during mid to late June. Plants with leaf damage were as high as 90 percent in the central area, 85 percent in the north-central and northwest, and 89 percent in the south-central areas. Second-generation adults occurred in the southwestern area in early July. From mid to late July, egg masses per 100 plants ranged 14-38 in the southwestern area and 3-27 in the northwestern area. The 1975 fall abundance survey showed that the percent of the plants infested and borers per 100 plants were higher than in 1974 in all districts.

The first generation of European corn borer ranged light to moderate in NEBRASKA except in the northeast area which had scattered economic infestations in Fillmore, Hall, Merrick, and Buffalo Counties with 20-30 percent of the whorls infested on July 19. Only one of 338 fields in Clay County was recommended for treatment for first generation borers. Fields in the northeastern area averaged 75 percent infestation July 9-10. Fields in Cuming County averaged 44 percent infestation. Heavy flights occurred in July. Adults in field margins averaged 50 or more per square yard. All signs indicated a heavy second generation. In the northeast district 52 percent of the plants in 9 fields had more than one egg mass per plant August 14. By September 4, all fields in Cedar County were completely infested. Fall surveys of districts indicated heavy borer populations per plant: Northeast 7, east 6, southeast 2, central 4, and south 3. An early harvest, permitted by dry weather, reduced losses. A heavy first generation is expected in June 1976 depending on weather.

European corn borer larvae were the lightest ever recorded in IOWA during the spring survey in Boone County for the week ending May 23. The first adults were collected in light traps in Ringgold and Hancock Counties on June 17. Light whorl feeding, 4 percent, was first observed in Hamilton, Lee, and Polk Counties the week ending July 4. Development was about 7-10 days ahead of 1974. Egg masses were found on 3-5 percent of the plants in Lee County the week ending July 25. Egg laying was still underway the week ending August 8. The percent of plants infested during the annual fall survey was 59 percent with an average of 144 larvae per 100 plants was up from 1974 levels. First-generation larval damage to field corn is expected in western and south-eastern areas in 1976.

European corn borer larvae survival in SOUTH DAKOTA ranged 90-95 percent in untilled fields. The first adult flight peaked the last week of June and the first two weeks in July at Brookings. Activity was noted during the last half of August. The fall abundance survey in 9 southeastern counties in 1975 showed an increase from 127 to 179 borers per 100 plants and from 36 to 57-percent infested plants. Two high population counties, Turner and Union, had 349 and 402 borers per 100 stalks, respectively. Winter survival in NORTH DAKOTA averaged 78 percent in untilled corn in Cass, Dickey, Ransom, Richland, and Sargent Counties. By fall, populations increased in the same counties from 15 in 1974 to 34 borers per 100 plants in 1975. Plants infested also increased from 24 percent in 1974 to 56 percent in 1975.

Fall overwintering MINNESOTA populations of European corn borer in 1974 were the lightest in history in most districts. Rainfall reduced egg laying in June and the first generation remained light. July and August weather was favorable and the second generation increased. Heavy catches of adults in light traps, particularly in the southwest district, and higher concentrations of overwintering larvae were expected in that area, but increases were not as high as expected. Overwintering larvae will increase threefold, leading to a heavier first generation, but still relatively light populations.

Large spot infestations of European corn borer damaged corn in central and eastern TENNESSEE fields in late June and early July. Fall surveys in NORTH CAROLINA across the Coastal Plain indicated 1975 infestation levels similar to 1974 levels. Infested stalks averaged 43 percent with about 5 percent lodging. Lodging in some Robeson, Scotland, and Hoke County fields exceeded 50 percent in combination with stalk rot. Eggs first hatched in KENTUCKY in late May in southern areas. By early to mid-June, larvae were in the midribs and whorls of corn. The infestation was heavier than in 1974. First-generation larvae were more damaging in 1975 than in 1972 to 1974. Second-generation larvae were found during mid-July in the western area where some fields had 95+ percent of the stalks infested with 2-3 larvae per plant early in the season. Counts were heaviest in some fields in the south-central area where 60-70 percent of the stalks were infested with 50-70 larvae per 100 corn plants at harvest time. Fall surveys showed the percent of plants infested (and number of larvae per 100 plants) by area: Western 28.5 (29.2); south-central 68.6 (49.2); and central 30.1 (16.9). The statewide total was 43.1 (32.9), a small increase over the average for 1974.

European corn borer adults were present in INDIANA blacklight traps May 7-14 in the southwest district. Mostly first and second instar larvae were on corn in the west-central district by June 13. The smallest since the summer survey began in 1970, the summer generation averaged 0.9 immatures per 100 stalks in 2.5 percent of the stalks. The number of infested stalks also declined from 1974 levels. The survey revealed the following numbers of immatures per 100 stalks by district: North north-central 4, north northwest 1.6, south southeast 1.3, and south southwest 1.2. Fall populations were up slightly from 1974, but were below the 1961-1970 average. The 1975 average was 33.9 borers per 100 stalks statewide, 10 fewer than the norm. Counts were heaviest in the following districts: Southwest 71.2, north north-central 57.89, and north northeast 53.60. A total of 24.9 percent of the plants were infested statewide.

In ILLINOIS the second generation of European corn borer overwintering population in 1975 was about twice that of 1974. This averaged 73 borers per 100 plants as compared to 36, well below the 10 year average of 105 borers per 100 plants. Larvae per 100 plants averaged over 200 in 3 of 44 counties and 100-200 in 8 other counties. "Hot spots" occurred in Whiteside County (averaged 293), Ogle County (averaged 218), and Madison County (averaged 214). The winter survival rate was 87 percent, higher than the average of 75 percent which was due to a mild winter. The overwintering 1975 generation was 17 percent infected with *Perezia* sp. as compared to 21 percent in 1974. The first generation in July averaged 1.7 borers per 100 plants. This is considered light but some "hot spots" occurred in both the northernmost and southernmost districts, where some counties averaged over 9 larvae per 100 plants. Pupation in the southern third of the State began in late April, one gravid female was found by the week of May 19. Pupation averaged 27 percent in Ogle County with no emergence. By the week of June 2, the first egg masses and whorl feeding was found on 40-inch corn in Pope County. After 14 days, whorl feeding was common throughout the southern half of Illinois, and adult flights and egg laying were common throughout the northern half of the State. About 159,000 acres were treated.

European corn borer was generally below the economic threshold throughout OHIO. Adult activity (based on blacklight trap catches in Wayne County) began on May 22 and peaked the week of June 16. First generation larval infestations ranged up to 50 percent. First-generation adult activity began July 17 and peaked the week of July 28, counts averaged 90 adults per night in blacklight trap catches. Second-generation larvae infested 0-38 percent of the plants.

Winter survival of European corn borer in WISCONSIN was over 95 percent, according to cornstalk dissections in April. Pupation began by May 20 near Arena, Iowa County. Adults were first caught in blacklight traps on June 4 and peaked about June 13. The first eggs were found in Dane County on June 11 with an average of 7 to 10-percent infestation. A few fields of early sweet corn had about 75-percent ear infestation. Pupation began in southern counties by July 16. Adults of the first generation were caught in blacklight traps July 23 and peaked between August 12 and 20 at southern sites. Second-generation eggs were found in Central Sands by July 30 but not in most southern sweet

corn fields until about August 4. Heavy egg laying was noted around August 15. By September 1, about 20 percent of the sweet corn and late dent corn was infested; exceptional fields had nearly all plants infested. Damage by European corn borer was very light due to controls and an early harvest. Fall surveys found an average of 22 borers per 100 plants, twice the number found in 1974 but about half of the 5-year average of 42 per 100 plants.

First-generation European corn borer damaged some corn in MICHIGAN in 1975. The second generation, usually the most damaging, was normal. Adults emerged May 24-26 at the Monroe blacklight station. Egg masses were in the field by June 8. Due to warmer temperatures and above average rainfall, nightly collections at blacklight stations were in the high 300's to 400+ until September 6. Then light numbers persisted until frost.

European corn borer continued light in VIRGINIA through May 30. By June 20, this pest damaged 80 percent of the corn seedlings in a 30-acre field in King and Queen County. Larval populations in ears of field corn were heavy throughout the Tidewater region on July 24 and heaviest in the Northern Neck region. Adult emergence was heavy on August 5 due to the maturing of hosts. The first flight activity in MARYLAND was 10-13 days later than in 1974 with a weak peak between May 25-30, flights tapered off by June 11. First-generation infestations in June ranged light to moderate, 20-60 percent. Pupation occurred between June 20 and July 2. Emergence of first-generation adults peaked between July 10 and 18. Egg laying in July and August over a prolonged period provided continuous larval pressure. Damage by the second generation was moderate and not above normal. Less than 5 percent of the field corn acreage received controls.

Overwintered larvae of European corn borer in DELAWARE began pupation earlier than usual on March 22. The first adults in blacklight traps and the first egg masses on *Rumex* sp. (dock) were collected in the southern area on May 10. By May 17, egg masses were present on early planted corn and potatoes, and adults averaged 5 per night in trap collections. Most corn had 70-95 percent infestations by May 31. By June 24, pupae of the first generation were present. Adults appeared on July 5 and averaged 20+ per night by July 19. For the rest of the season adults averaged 15-30 per night in most areas. Fresh egg masses were still very numerous on late-planted corn and peppers during early September. In general, populations were heavier on most crops as compared with 1974 levels. The State average in the fall survey was 389 borers per 100 corn plants, an increase of 18 percent.

The first European corn borer adults in NEW YORK were trapped May 21 in Ulster County and May 22 in Ontario County. Adults of the first generation were taken July 14 in Ontario County; the light trap catch of this brood there was much heavier than usual. A 70-percent stalk infestation was observed in a field in Orleans County. The first-generation flight peaked in Ulster County by mid-September. In VERMONT the fall survey of field corn, 16.9 percent of the plants had 13 borers per 100 plants compared

with 1974 levels of 20.6 percent of the plants with an average of 41.8 borers per 100 plants. European corn borer occurred on sweet corn at about the usual levels in NEW HAMPSHIRE for the first brood which infested about 10 percent of untreated ears. The second brood was reduced by unusually hot, dry weather later in the summer. In MAINE all tassels of several early fields of sweet corn and field corn were infested. Infestations of 8 percent were common as in 1974. No-till corn still had heavier infestations.

FALL ARMYWORM (Spodoptera frugiperda) infestations in OKLAHOMA were present on sorghum from mid-June to mid-September. Some infestations were heavy, especially in the west-central counties, but were mostly of little importance in 1975. Infestations were spotty in corn and sorghum whorls in early July over most of KANSAS and generally trace to moderate on ears during August. Activity was light on corn in NEBRASKA. Damage light to moderate in occasional fields surveyed in the northeast district July 10.

Infestations were light to moderate in MISSOURI on late corn in the southern areas from late June to early August. Infested whorls ranged 1-36 percent, larvae averaged one per plant. Damage was sporadic throughout the southern half of ILLINOIS during July and August, about 36,000 acres were treated. Corn and sorghum planted in June and July in MISSISSIPPI were severely damaged. Larval feeding on the whorls and ears caused about 50-percent reduction in yield.

Fall armyworm was the principal pest of corn in most areas of FLORIDA and was unusually heavy in the northern area. At Homestead, Dade County, egg laying on young sweet corn was especially heavy during spring; controls were effective. Numbers declined in May and had not resurged by mid-November. Infestations were unusually heavy during spring on sweet corn about 80 miles to the north in the Everglades area, Palm Beach County, due to heavy fall populations and a mild winter in 1974. Unsprayed field plots had 99 percent of ears infested in May, with 60 percent of the population being fall armyworm, the rest was CORN EARWORM (Heliothis zea). Fall armyworm was heavy on sweet corn, skeletonizing leaves and damaging whorls during the fall at Bradenton, Manatee County. Severe damage was noted on untreated or poorly treated corn and sorghum at Hastings, St. Johns County, during June to August. In Levy and western Alachua Counties, larvae were very heavy during late August and early September on unsprayed, late-planted sorghum. At least 1,000 acres of field corn were defoliated in Alachua County. Sorghum in Gadsden and Jackson Counties suffered severe damage to plants and heads. Sorghum planted late in the panhandle area required several treatments. Jackson County field corn had high levels throughout the season. There was more damage to field corn in the panhandle area during 1975 than in any of the past 5 years, with damaging populations appearing in late May about 6 weeks earlier than usual, completely defoliating several late-planted cornfields.

Fall armyworm in SOUTH CAROLINA ranged moderate to heavy on corn and sorghum in late June and early July. Damage, especially to sorghum, continued into August. Control was difficult and damage to sorghum was economic in all but the mountainous sections of the State. Fall armyworm damage in NORTH CAROLINA began during mid-July in corn and sorghum in Scotland and New Hanover Counties. Damage spread to many grass crops in Cleveland, Johnston, and Harnett Counties during the first half of August. In August, damage occurred in localized sorghum and corn fields scattered over the Piedmont and Coastal Plain, most severe in no-till and grassy fields. Ranging from 5 larvae per 3-foot plant, infestations peaked at 75 percent on no-till sorghum in Wake, Franklin, Warren, Nash, Halifax, and Vance Counties.

Fall armyworm feeding on field corn was evident from mid-July to September statewide in MARYLAND. Several small areas in Frederick, Somerset, and Wicomico Counties hosted moderate to heavy, 20-40 percent, populations where feeding injury was spotty but well above normal on 3,000 acres. Damage levels in late-planted corn in other counties was light, 1-10 percent. This pest was troublesome on sweet corn in Dorchester, Queen Annes, Somerset, and Caroline Counties. This species in sweet corn averaged 30 percent of the larval count in early September. Counts were abundant on some DELAWARE late-planted corn during the end of July through August. Fall armyworm caused damage in RHODE ISLAND from early to mid-August in commercial and garden corn in eastern and southern areas. Infestations were most destructive to terminals of pretasselled field corn in Newport County with 2-7 larvae per plant. Counts increased in MAINE until the first week in August when some corn fields in tassel were treated. Damage was at least 3 times that caused by ARMYWORM (Pseudaletia unipuncta); about 2,500 acres were treated.

SOUTHWESTERN CORN BORER (Diatraea grandiosella) damage in OKLAHOMA by the first generation was light in most panhandle area corn fields but second-generation damage was heavy in many fields. Early September infestations ranged 5-100 (averaged 58) percent. Counts were heavy on sorghum in some fields in Washita and Caddo Counties in mid-October. As in 1974, this was a serious pest of KANSAS corn with damage mostly in south-central, central, and southwestern counties, especially in Morton, Seward, and Stevens Counties. Loss due to lodging in 1975 was much less than in 1974 due to better weather conditions and early harvest. The first generation was lighter than in 1974, but the second generation was as heavy as in 1974. Adults from overwintered larvae emerged in Stevens, Kiowa, and Stafford Counties by mid-June. By late June, most eggs hatched on corn in Stafford, Pawnee, and Barton Counties with some "shotholing" of whorls. Pupation began in Stafford County by July 11 and was well underway by July 18. First generation adults were flying and laying eggs by July 22. Egg laying continued for a month. This flight peaked in late July and early August in Stafford County. By late August, some fresh third-generation eggs were found on very late corn in Stafford County. Most second-generation larvae overwintered. Some stalk girdling was noted by September 12. The first adult of the season in MISSOURI was trapped May 27. Second-generation infestations ranged 3-26 percent in the southwestern area in late August. Infestations were moderate to heavy

on 10-87 percent of the plants in the southeastern area during late July and early August. Fall surveys in 8 southeastern counties showed the average percent of plants infested was 52.8 percent, down from 59.2 percent in 1974.; the average for girdled plants was 11.2 percent, down from 17.5 percent in 1974.

Southwestern corn borer in ILLINOIS caused light to moderate damage to corn in most of the southernmost 14 counties. Infestations up to 20 percent were found in White and Union Counties. Adults emerged in western KENTUCKY on July 16. The second generation peaked the last of July in the western area. Statewide, first-generation larvae infested about 1.36 percent of the corn acreage, the second-generation infested about 5.08 percent. Only 1.4 percent needed treatment. Late-planted corn was more heavily damaged. Movement of this pest into uninfested areas continued. Nine counties along the southern border of the State were newly infested, an advance of 30 miles. This is somewhat more than the average easterly advance of 15 miles per year as determined from surveys during the previous 9 years. Many fields of late-planted corn in central and western TENNESSEE had heavy stalk lodging before harvest. First-generation larvae began occurring in corn in northern ALABAMA in late May and early June. Second and partial third generation larvae caused more damage than in previous years.

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) caused rather heavy stand loss in sugarcane in FLORIDA during the early spring on several farms at various points in the Everglades. Probably over 1,000 acres were affected. This species caused heavy damage to untreated field corn near Wilcox, Gilchrist County, during May. It was a problem on some untreated field corn in Gadsden County during a dry, early May but subsided in the panhandle area with substantial rain. Larvae were much less damaging in SOUTH CAROLINA in 1975 than in 1974; damage was economic in only scattered localized areas.

SUGARCANE BORER (*Diatraea saccharalis*) infestation density in FLORIDA increased; the number of infested sugarcane joints increased from 7 percent in 1974 to 8 percent in 1975. About 60,000 acres were treated in 1975.

BLACK CUTWORM (*Agrotis ipsilon*) although minor, was more of a pest than usual on seedling corn and sorghum in eastern KANSAS from mid to late May. Infestations in SOUTH DAKOTA were much heavier in 1975 than in previous years. About 50,000 acres were economically damaged in the southeastern counties. Black cutworm in MISSOURI ranged light to very severe in fields scattered throughout the corn area. Complete stand loss was noted in fields from the central, northeastern, north-central, and north-western areas. Most heavy populations occurred from mid-May to early June. Black cutworm was first reported in IOWA on field corn in Appanoose, Benton, Hamilton, Harrison, Mahaska, Marshall, Polk, Pottawattamie, Story, and Woodbury Counties during the week ending May 30. By the week ending June 6, damaged fields were reported from more than 25 counties statewide. Many fields were treated or replanted because stands were reduced 20-30 percent or more. Damage peaked by June 13. Adults in light trap collections peaked during the week ending July 4. Damage in 1975 was the

worst in more than 10 years, perhaps as much as 10 percent of the corn acreage had some economic losses. Black cutworm infestations in 1975 were the most extensive in recent years in ILLINOIS. Over 173,000 acres received emergency treatment and over 58,000 acres were replanted. In Richland County all fields examined were infested during the week of June 2. Damage ranged from less than one to well over 50 percent. During the last week of May, one Iroquois County field averaged 50+ percent damage on 4 to 5-inch corn. Damage was widespread in Clinton and St. Clair Counties during the first half of June.

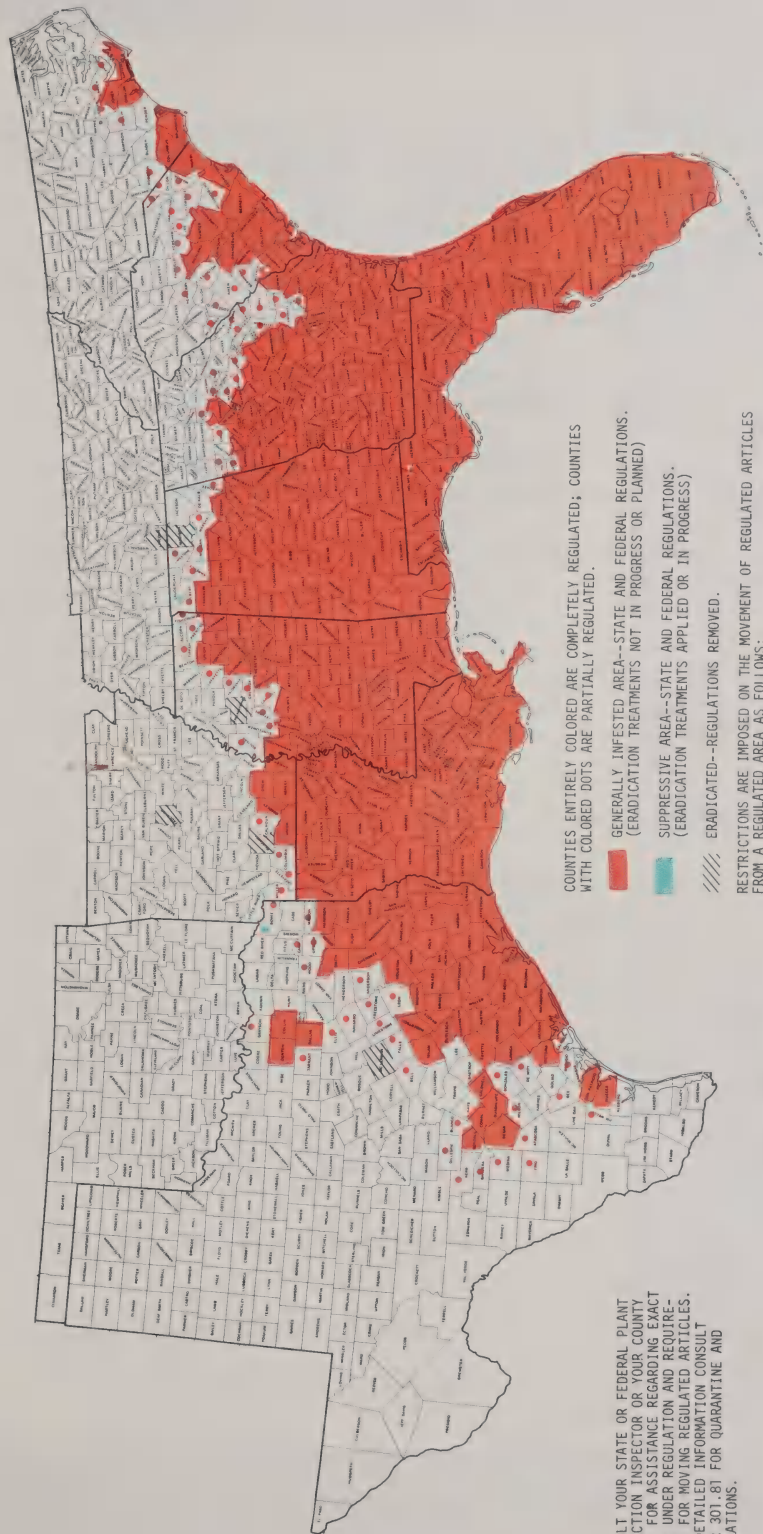
WESTERN BEAN CUTWORM (Loxagrotis albicosta) outbreaks on corn were noted in Finney, Kearny, Haskell, and Grant Counties; infestations were first discovered in the area in 1974 (except in Grant). Moth flights peaked in large numbers in Finney County during early July and in Greeley County in small numbers about the second week of July. Heavy eggs and some young larvae on corn in the outbreak area by July 18. Widespread treatment from mid to late July gave good control. Scattered economic infestations occurred in Chase, Perkins, Merrick, Hall, Fillmore, and Antelope Counties of NEBRASKA. The heaviest noted was in Antelope County, where several fields had 80 percent of ears infested on September 4. Populations in IDAHO were monitored in Cassia County and were very light on processing sweet corn. Only an occasional field showed damage in western Twin Falls County.

POTATO STEM BORER (Hydroecia micacea) was reported as a new State record in NEW YORK. Fifty percent stand reduction occurred in a 10-acre Franklin County field. Late instar larvae and pupae were collected in St. Lawrence County July 2. Infestations were spotty but scattered over most of St. Lawrence County.

CORN ROOTWORMS (Diabrotica spp.) WESTERN CORN ROOTWORM (D. virgifera) caused local damage in UTAH to untreated fields and home gardens. Root injury was greatly reduced in most fields treated in the spring. Some areas in Cache and Box Elder Counties required controls for the abundant adults at silking time. Control failures on corn for larvae of Diabrotica spp. in KANSAS were more common in 1975 than in the past several years. Serious root damage was noted from early July to mid-August, especially in northern and western areas. Chemical control of adults was also common in these areas. The first hatch of D. virgifera of the season in MISSOURI occurred in the southwest area during the first week in June. By mid-June heavy larval populations were seen on popcorn in Jasper County, 4-30 per plant. From late June to mid-July heavy larval populations occurred in fields throughout the corn-growing area. Lodging (larval damage) and adults were moderate to heavy in many areas from mid-July to mid-August. Adults ranged 3-40+ per plant. D. virgifera and NORTHERN CORN ROOTWORM (D. longicornis) populations increased in 1975 in NEBRASKA, there were many control problems. Resistance is unconfirmed at this time. Failures were most likely due to poor application. First-instar larvae were first observed June 4 feeding on corn roots in Merrick and Hall Counties. Damage increased through the second week in July. The first pupae were found at Mead, Saunders County, on June 18. Some severe lodging was noted June 26. Adults ranged 1-5 per plant in Merrick and York Counties on July 9. The increase peaked July 30 to August 5. In Clay County, 207 fields averaged 1.45 adults

IMPORTED FIRE ANT QUARANTINES

U.S. DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
PLANT PROTECTION AND QUARANTINE PROGRAMS
COOPERATING WITH AFFECTED STATES



CONSULT YOUR STATE OR FEDERAL PLANT PROTECTION INSPECTOR OR YOUR COUNTY AGENT FOR ASSISTANCE REGARDING EXACT AREAS UNDER REGULATION AND REQUIREMENTS FOR MOVING REGULATED ARTICLES. FOR DETAILED INFORMATION CONSULT 7 CFR 301.81 FOR QUARANTINE AND REGULATIONS.

COUNTIES ENTIRELY COLORED ARE COMPLETELY REGULATED; COUNTIES WITH COLORED DOTS ARE PARTIALLY REGULATED.
■ GENERALLY INFESTED AREA--STATE AND FEDERAL REGULATIONS. (ERADICATION TREATMENTS NOT IN PROGRESS OR PLANNED)
■ SUPPRESSIVE AREA--STATE AND FEDERAL REGULATIONS. (ERADICATION TREATMENTS APPLIED OR IN PROGRESS)
 /// ERADICATED--REGULATIONS REMOVED.

RESTRICTIONS ARE IMPOSED ON THE MOVEMENT OF REGULATED ARTICLES FROM A REGULATED AREA AS FOLLOWS:

1. RED INTO OR THROUGH GREEN OR WHITE.
2. GREEN INTO OR THROUGH WHITE
3. GREEN INTO GREEN.
4. GREEN WITHIN GREEN.*

*WHEN IT IS DETERMINED BY THE INSPECTOR THAT A HAZARD OF SPREAD EXISTS.

(SEE REVERSE SIDE FOR LIST OF REGULATED ARTICLES.)

REVISED AUGUST 2, 1976

THE FOLLOWING REGULATED ARTICLES REQUIRE A CERTIFICATE
OR PERMIT YEAR-ROUND EXCEPT AS INDICATED:

1. Soil, separately or with other things.

Soil samples shipped to approved laboratories do not require attachment of certificate or permit.*

Potting soil is exempt if commercially prepared, packaged, and shipped in original containers.

2. Plants with roots with soil attached except houseplants grown in the home and not for sale are not regulated.

Transplants are exempt if substantially free of soil.**

3. Grass sod.

4. Hay and straw.

Hay and straw are exempt if used for packing or bedding.

5. Used mechanized soil-moving equipment.

Used mechanized soil-moving equipment is exempt*** if cleaned of all loose, noncompacted soil.

6. Any other products, articles, or means of conveyance of any character whatsoever, not covered by the above, when it is determined by an inspector that they present a hazard of spread of the imported fire ant and the person in possession thereof has been so notified.

* Information as to approved laboratories may be obtained from an inspector.

** Not sufficient soil to harbor imported fire ants.

*** Exempt if not exposed to infestation after cleaning or other prescribed handling.

per plant the week of August 7. The heaviest count was 8.5 per plant. In Clay County 39 of 338 fields (28,841 acres) were recommended for emergency larval treatment.

Diabrotica virgifera larvae were first detected in IOWA corn in Clinton, Mills, and Scott Counties during the week ending June 27. In 1975, the populations statewide apparently increased from 1974. Adults caused more problems especially in the western counties. Larval damage was more serious in all areas. Reports of soil insecticide failures were received statewide, including Jones and Scott Counties in eastern Iowa. Damaged corn was further hindered by an extended summer drought which inhibited brace root development. Heavy populations are expected in 1976.

Corn rootworms were the most serious insect problem in the major corn production areas of SOUTH DAKOTA. They were responsible for the largest insecticidal expenditure by growers. D. virgifera dominated the species mix at 90 percent of the overall adult population. D. longicornis constituted from 10 to 20 percent of the population. In several east-central counties D. longicornis caused severe damage on first-year corn following small grains and flax. Heavy populations in small grain stubble fields indicated potential damage and necessity of treatment if planted to corn in 1976. Egg hatch occurred during the last 2 weeks in June with the exception of some 10-14 day lag. Second-instar larvae were noted on June 23, the general infestation pattern in continuous corn was moderate to heavy. Larval populations in untreated areas were 100+ per plant and ranged to a light 20 per plant at various locations. Adults were first noted July 8 in the Beresford area. Adult populations of 3-25 per plant were common during the last week of July. Surveys in 1975 showed moderate to heavy populations throughout the State. Damage potential was indicated greater than in 1975.

D. longicornis adults were collected in Sargent County, NORTH DAKOTA, for a new distribution record during 1975. Adults were noted at less than one in fields surveyed in early September in Dickey, Ransom, Richland, and Sargent Counties, none in LaMoure County. Twenty-four percent of the fields in Cass, Dickey, Ransom, Richland, and Sargent Counties showed lodged or goosenecked plants due to western corn rootworm damage during mid-October. Foster and Stutsman County were found infested during 1975. SOUTHERN CORN ROOTWORM (D. undecimpunctata howardi) adults were collected in NORTH DAKOTA in Billings, Burleigh, Dunn, Grant, Griggs, Logan, McIntosh, Mercer, Slope, Sioux, Stark, Stutsman, and Traill Counties for new county records in 1975.

D. longicornis and D. virgifera decreased in the west-central, southwest, central, and east-central district of MINNESOTA and significant increases were noted in the south-central and south-east districts. Populations caused losses in spite of decreases. Populations were noted as follows per acre by district: Southwest 36,680; south-central 53,421; west-central 28,511; central 17,478; and east-central 10,874. Populations were heavy enough to cause damage in 1976 if corn following corn is not treated.

Diabrotica longicornis and D. virgifera adults in July and August were heavier than the past 5 year average for the 5 northernmost districts of ILLINOIS. Populations averaged 2+ per plant in Bureau, Stephenson, and Woodford Counties; seven others averaged 1-2 per plant. The earliest pupation was noted during the week of June 22 in Mason County. Light damage was observed in several fields from the northern and western areas. During the following 14 days emergence proceeded rapidly statewide. Extensive larval damage was noted in Whiteside and Stephenson Counties and moderate damage in Macon and Tazewell Counties with populations up to five adults per plant. By late July and early August some fields in the northwest district had up to 15 adults per plant. One new county record was recorded in St. Clair County when one adult was collected on sweet corn August 8. Approximately 351,000 acres were treated. An additional 5,503,000 acres were treated with a soil insecticide.

The first D. virgifera adult of the season in Tippecanoe County, INDIANA, was taken July 7, and were still emerging through September in Porter County. The number of fields infested was generally reduced. The area where damage was more likely in 1975 was farther east than in 1974: LaGrange, Noble, Elkhart, Kosciusko, St. Joseph, and Marshall Counties. In the past, LaPorte and Porter Counties were the foci of the heavier infestation. The damage that occurred, seemed more severe than in 1974. This species was taken in Delaware, Randolph, and Knox Counties for 3 new records, the latter being possibly a new invasion from Illinois. The first D. longicornis adult of the season in INDIANA was taken in a Vanderburgh County blacklight trap June 21. The first in the west-central district was taken July 2 in Tippecanoe County. Adults were noted in a smaller percentage of fields north and a larger percentage south of Indianapolis than in 1974. Damage in 1975 was negligible.

D. longicornis was very light in OHIO this year, serious damage was restricted to isolated continuous cornfields. Soil samples the first week of June in Wayne County averaged 48.5 (ranged 0-115) eggs per pint. The first larvae were found on June 6. The first adults feeding in silks occurred in Wayne County on July 10, about one week earlier than over the last 4 years. Statewide, adults were light through July and the first week of August. Adults ranged 0.04-25 per 25 plants. Populations were mostly light the rest of August, levels reached a maximum of 51 adults per 25 plants in northwestern and southwestern counties. Populations were considerably heavier in the northeastern counties reaching 16.4 adults per ear on August 14. Dispersal of adults from the maturing cornfields was underway by August 29. D. virgifera was found in OHIO for the first time in 1974 in 5 northwestern counties. Surveys during the first 2 weeks of August, 1975, confirmed its presence in 8 additional counties. These were Van Wert, Hancock, Lucas, Wood, Sandusky, Allen, Auglaize, and Mercer.

Corn field soil samples collected in the fall of 1974 yielded a WISCONSIN average of 11.9 corn rootworm eggs per pint of soil; it was believed that the egg population posed a potential threat in most cornfields in the southern two-thirds of the State. Spring-collected eggs from Vernon and Columbia Counties had hatches of 75 and about 60 percent, respectively, indicating good overwintering survival. Early instar larvae were found in Columbia County corn by June 11, and nearly mature larvae were present in Iowa County by July 1. Adults of Diabrotia longicornis were seen in several southern counties by July 9, but adult emergence of adults was not complete until about August 17. The annual survey of adults indicated a State average population of 1.3 adults per plant, a slight increase from the previous year.

Egg laying was underway by August 13 in Columbia County and some D. virgifera finished laying eggs by August 20. Lodging of corn plants due to rootworm injury began early in July, with up to 80 percent lodging in some fields. The fall pest survey found a State average of 6.7 percent plants lodged, the second highest since 1971 when 8.4 percent were lodged. Corn field soil collected late in September and early October revealed a State average of 10.3 eggs per pint of soil, a slight decrease from the fall of 1974. In MICHIGAN this species was officially found in St. Clair County during 1975. The population continued to increase, especially in the northern corn area. D. undecimpunctata howardi damage surveys in 15 minimum-till cornfields scattered across the Piedmont in NORTH CAROLINA indicated a high incidence of rootworm injury. Infestation ranged 3-40 percent (average 10 percent) in untreated fields with corresponding stunting and stand reduction.

D. longicornis was the worst pest of field corn in central MARYLAND. About 45,000 acres received preventative treatments. Losses due to lodging or poor pollination were light statewide. About 13,000 acres in Baltimore, Carroll, Frederick, and Harford Counties had yield reductions of 1-3 percent. Widespread use of soil insecticides kept populations and losses minimal.

D. longicornis adults were noted in NEW YORK on corn in Tompkins County July 20. A four-county survey (Seneca, Yates, Ontario, and Cayuga) of untreated corn fields in at least the second consecutive year of corn found an average of 2.4 rootworms per plant. Lodging was less than one percent July 10-25. Populations remained at subeconomic levels during 1975 on field corn throughout the northern part of NEW HAMPSHIRE.

A LEAF BEETLE (Systema frontalis) larval damage to seedling corn grown for grain was confirmed for first time in INDIANA. Severely damaged plants ranged 5-40 percent in spots in a 90-acre Vanderburgh County field. Infested spots were common in about 40 acres of the field and in these spots 30-40 percent of the plants were lost. This species was reported as an insect pest in ILLINOIS for the first time in 1975. Bottom land corn in central and southern regions was damaged. This insect normally feeds on Polygonum spp. (smartweed) and other weeds.

CORN FLEA BEETLE (Chaetocnema pulicaria) infestations were light to moderate in all MISSOURI corn-growing areas. Populations ranged from 0.5 to 6 beetles per plant. These populations were found in the southern areas in early May and the northern areas in mid to late May. Damage was light to moderate on large acreages of commercial sweet corn in Madison and St. Clair Counties, ILLINOIS, and Stewart's disease was widespread in the Richland and Edwards County area. Approximately 88,000 acres were treated. Damage to statewide corn in 1975 was relatively light in KENTUCKY. Central area populations were lighter than usual. Stewart's disease, vectored by this pest, was very light. Adults were observed in NEW YORK feeding on seedling corn in Columbia and Rensselaer Counties, May 14.

Adult injury by a WEEVIL (Sphenophorus callosus) continued to be a major concern in NORTH CAROLINA to the southern Coastal Plain and blackland area on corn during May and June. Plants injured during seedling stage averaged 15 percent in 50 Hoke, Robeson, and Columbus County fields, up to 75 percent of the plants were injured in Robeson County. In the southern and eastern Coastal Plain counties, 250 acres were abandoned or replanted. Severe damage was also reported from Johnston, Wayne, Lenoir, and Pitt Counties.

CHINCH BUG (Blissus leucopterus leucopterus) was a minor pest in KANSAS seedling corn and sorghum in the eastern half of KANSAS in 1975, but caused considerable stand damage in Nemaha and Dickinson Counties.

CORN BLOTCH LEAFMINER (Agromyza parvicornis) was heavy in MISSOURI on irrigated corn in the southwest area in mid-June. Infested leaves ranged 4-8 with 3-6 larvae on nearly all plants. Extensive activity in NEW YORK was observed in Albany County and Ulster County about July 1. Relatively high levels of foliar adult and larval feeding was noted in Tompkins, Dutchess, and Essex Counties in late August.

SEEDCORN MAGGOT (Hylemya platura) damage was very spotty in IDAHO and ranged 0-10 percent in the heaviest infested fields in the Magic Valley area. This species was first trapped in NEW YORK in 1975 during the week of May 3-8 in Orange County and 14 days later in Ontario and Yates Counties.

SORGHUM MIDGE (Contarinia sorghicola) damage on grain sorghum in OKLAHOMA was noted in many areas in August and September. Infestations were most common in the west-central counties where up to 90 percent of the grain was destroyed in some fields. Infestations were moderate to heavy in MISSOURI on late sorghum in the southeast area. Infested heads ranged 10-100 percent during late August and early September. Adults in MISSISSIPPI moved from johnsongrass to grain sorghum from mid to late June through September. Sorghum blooming in mid to late August suffered 20-25 percent seed loss in Hinds, Montgomery, and Noxubee Counties. Adults in FLORIDA appeared in Jackson County sorghum fields by July 3. Infestations were moderate at Quincy, Gadsden County, during mid-July and adults emerged rapidly at this time; late maturing sorghum missed infestation. In Alachua and Levy Counties, some preventive controls were started by September 23.

YELLOW SUGARCANE APHID (*Sipha flava*) increased considerably in FLORIDA over 1974; over 10,000 acres had to be treated. Noted in numbers for the first time on INDIANA sorghum in Vigo and Parke Counties, but not economic.

BANKS GRASS MITE (*Oligonychus pratensis*) infestations were light on silage corn in Churchill County, only 66 acres treated in late July and early August. Populations were noted on OKLAHOMA corn and sorghum in the Panhandle counties from mid-July to mid-September. A number of corn fields were treated in mid and late August. Damage was generally not serious on sorghum.

SMALL GRAINS

Highlights

HESSIAN FLY infestations were mostly light but there were some scattered heavy infestations in Oklahoma, Kansas, Illinois, and Indiana. WHEAT STEM MAGGOT was unusually heavy in Nebraska. WHEAT STEM SAWFLY counts declined in North Dakota. An unusual case of an APHID feeding on small grains was found in Arkansas. BROWN WHEAT MITE counts were down sharply in Nevada, heavy in Idaho.

HESSIAN FLY (*Mayetiola destructor*) infestations in OKLAHOMA were found in wheat in several north-central and northeast counties and in Creek and Stephens Counties during June. Mostly light (trace-10 percent) but one field in Pawnee County averaged 90 percent infested and lodged with "flaxseeds" ranging up to 16 per stem. Scattered heavy infestations in KANSAS caused some stem breakage on wheat in certain southeast district counties during late May and early June. Populations in ILLINOIS were light and noneconomic again in 1975. The heaviest were in Clinton County where 7.2 puparia per 100 tillers were found. The State average of 2 puparia per 100 tillers was less than the 10-year average of 4 puparia per 100 tillers. The INDIANA average percent infestation for all varieties of wheat was 0.9, number of puparia per 100 stems was 1.1. In 1975, 14 percent of the fields surveyed were infested, 2 percent in 1974. Seven of 307 fields had percentage levels greater than 10 percent, highest was 24 percent. The low infestation rate was partly due to 85 percent of the wheat planted being resistant to prevailing Race B Hessian fly. The resistant strain had 0.6 percent infestation, others were 3.6 percent infested.

WHEAT STEM MAGGOT (*Meromyza americana*) caused white heads in winter wheat. Ranged 1-4 percent in scattered fields in Gage, Pawnee, Saunders, and Custer Counties, NEBRASKA, in June. Populations were unusually heavy during 1975. Infestation levels were less than 5 percent in most SOUTH DAKOTA wheat fields with spotted areas of up to 40 percent damage. The spring wheat variety Chris, appeared more susceptible to maggot damage. Up to 10 percent damage was noted on wheat fields in the eastern part of NORTH DAKOTA.

FALL ARMYWORM (Spodoptera frugiperda) during the fall caused problems in scattered wheat fields in Stafford and Sumner Counties.

The most damaging PALE WESTERN CUTWORM (Agrotis orthogonia) infestations in KANSAS wheat was noted in Greeley, Hamilton, and particularly in Morton Counties during mid to late April.

WHEAT STEM SAWFLY (Cephus cinctus) cutting in NORTH DAKOTA decreased in 1975 shown by the annual survey of wheat stubble fields. Cut stems ranged up to 15.9 (averaged 0.51) percent compared to 1.2 percent in 1974. Cutting was in 36 percent of the fields surveyed compared to 58 percent in 1974.

BARLEY THRIPS (Limothrips denticornis) adults averaged 500 per 100 sweeps in rye in Sargent County, NORTH DAKOTA, by June 13. Migrating adults in Dickey and Eddy County ranged 150-200 per 100 sweeps by June 20.

A PLANT BUG (Labops hesperius) appeared in isolated small grain locations in SOUTH DAKOTA. Light to moderate damage was reported in Fall River, Meade, Haakon, and Sully Counties.

ENGLISH GRAIN APHID (Macrosiphum avenae) began increasing in NEVADA small grains in Churchill, Humboldt, and Pershing Counties in late May and early June. Economic infestations, in Churchill and Pershing Counties were noted by mid-June and in all three counties by July. In July, 8,200 acres were treated, mostly in Humboldt and Pershing Counties. This species was the major aphid on small grains in ALABAMA. Treatment efforts were limited to a few thousand acres in Tuscaloosa County and several counties in the southwest area.

AN APHID (Rhopalosiphum padi) was noted on OKLAHOMA wheat in most areas through mid-April and again by mid-November. Spring infestations were light, up to 80 per linear foot in the southwest area. Fall infestations were also light but ranged up to 700 per linear foot in some central and west-central counties.

AN APHID (Rhopalosiphum rufiabdominalis) was found feeding on the roots of wheat in May in Crittenden County, ARKANSAS, the first record of this species on small grains in the State. The field had been idle for 3 years and native vegetation is thought to have provided food supply. The field was summer fallowed and replanted in wheat. No aphids could be found in November. R. rufiabdominalis also caused slight damage to rice on levees in the southeast area in June. This was again a new experience. One week later the aphids had disappeared. It is believed these were two odd cases and will not likely occur again; however, special attention will continue to be given any possible problem.

BROWN WHEAT MITE (Petrobia latens) on small grains in Pershing County, NEVADA, were down sharply from 1974. In June about one-fifth the acres were treated as compared to 1974. Populations in IDAHO were still heavy on winter wheat and other small grains in Franklin and southern Power Counties in the late spring. Infestations were present on wheat in the Panhandle and northwest counties of OKLAHOMA in April and early May. Heavy infestations were noted only in Cimarron County at the end of April.

WINTER GRAIN MITE (Penthaleus major) ranged 300-500 per linear foot on wheat in Caddo, Washita, and Custer Counties, OKLAHOMA, in mid to late April and in Grady County in mid-November.

TURF, PASTURES, RANGELAND

Highlights

FALL ARMYWORM damage was very severe in North Carolina on forage and cover crops. SOUTHERN CHINCH BUG was still a major pest of St. Augustinegrass turf and pasture in Florida. HAIRY CHINCH BUG increased in New Hampshire and Vermont. GRASS BUG damage was extensive but less than 1966 in Utah. MORMAN CRICKET populations are still growing in Utah. MOLE CRICKETS remained major pests of turf and pastures in Florida.

FALL ARMYWORM (Spodoptera frugiperda) infestation levels were about the same in MISSISSIPPI as in 1974. Slight to moderate damage occurred on Coastal bermudagrass and native pastures in all southern counties from late August to September. Larvae began appearing in ALABAMA in June and July and were a more important pest of Coastal bermudagrass and other turf than during the past 3 years. Most damage occurred from August into October with 100,000+ acres treated. Larval damage was very severe in NORTH CAROLINA in 1975 to winter forage and cover crops, particularly rye, in approximately 30 Piedmont and Coastal Plains counties and 1-400 acres were destroyed. Damage was severe on at least 300 acres of Coastal bermudagrass hay in Scotland County. Controls were inadequate in many fields due to lack of materials available for use.

PYRALID MOTHS (Pediasia spp.) first moth flights occurred in Burleigh County, NORTH DAKOTA, on August 29. Adults were noted in Sioux County by September 5. Damage was less evident in SOUTH DAKOTA rangeland in 1975 than 1974. Populations were lighter and rainfall patterns contributed to better grass recovery and growth in infested areas. Spring applications of experimental insecticides again gave poor control. Spots of turf were heavily damaged by P. trisecta in all sections of MARYLAND. The highest counts in August and early September ranged 3-30 larvae per square foot in 600 acres of commercial sod in Queen Annes, Charles, and Montgomery Counties. Damage was minimized by timely insecticide applications. Overwintering eggs and larvae are moderately heavier than in the winter of 1974-1975. Adult emergence of P. mutabilis in RHODE ISLAND occurred June 23. Damage to home lawns and golf courses, mainly in Newport County, was moderate.

RANGE CATERPILLAR (Hemileuca oliviae) surveys in early January in NEW MEXICO showed a general increase in egg size and size of clusters, about twice that noted in 1974. Egg maturation was noted in late May in Lincoln and Chaves Counties. Hatch was observed the second week of June in Union County. Hatch was noted June 20 along the Colfax and Harding County line and near Chicos Lake. By June 27, 14 percent of the eggs in Lincoln County hatched. At this time, third-instar larvae were active along the Mora and Colfax County lines. By August 22, 53,000 acres were being treated in Lincoln County; adult emergence was noted October 15.

SCARAB BEETLES problems were as follows. In NEVADA Cyclocephala sp. damaged lawns in Clark and southern Nye Counties in September and October. Larvae ranged up to 100 per square yard. Cotinus nitida (green June beetle) adult emergence in MISSOURI and egg laying in fescue pastures in the south-central area occurred by July 19. Eggs were heavy in cow manure in the fields and by August, larval counts under bales left in the field ranged 5-80 per bale. In NORTH DAKOTA by May 16, heavy larval infestations of Phyllophaga spp. had damaged pastures in McHenry County. Infested lawns were found in Dickey County by August 8. Ataenius spretulus has been noted on bentgrass since 1973 in ILLINOIS; 1975 was the first year of economic damage. During early July, grubs were found on golf courses in northeast Chicago, Cook County, ranging 100-240 per square foot, feeding on roots of Poa annua (annual bluegrass) and bentgrass on fairways. The incidence of damaging A. spretulus populations in OHIO increased in 1975 with serious damage at additional locations including many golf courses in the Cincinnati area and also in Cleveland. In Cincinnati, first-generation larvae averaged 100+ per square foot on June 6, and increased up to 570 per square foot on June 16, pupae were also present. By June 30, adults were present and large patches of grass were dead. Second-generation larvae averaged 300 per square foot August 13.

SOUTHERN CHINCH BUG (Blissus insularis) was still a major pest of St. Augustinegrass turf and pasture in FLORIDA, costing several million dollars in damage and control costs. Damage by CHINCH BUG (B. leucopterus leucopterus) in MARYLAND was very light for the third successive year. An exception was one 60-acre residential section at Clinton, Prince Georges County; chinch bugs averaged 130 per square foot in September. HAIRY CHINCH BUG (B. leucopterus hirtus) increased in NEW HAMPSHIRE and caused severe damage to lawns, especially in the southern quarter of the State. This was probably due to extremely mild winters for the past two years. B. leucopterus leucopterus peaked in RHODE ISLAND at about mid-August, there were fewer problems than in 1974. B. leucopterus hirtus populations continued to increase over 1974 populations in VERMONT, severely damaged lawns in Windham, Windsor, Rutland, and Orange Counties. Economic controls were necessary in several cases. Extremely wet and then dry and hot conditions in MAINE apparently reduced damage by B. leucopterus leucopterus to less than half of 1974.

GRASS BUG problems were as follows. In NEVADA Irbisia brachycera heavily damaged crested wheatgrass in two areas of Humboldt County in June. In UTAH, chiefly Labops hesperius and other species at higher elevations, and I. pacifica, I. shulli, I. brachycera, and Labops spp. at intermediate and lower levels, damaged many thousands of acres, but not as severely as 1966. Large grass range areas in Garfield and Kane Counties, Diamond Fork and other areas of Utah County, Round Valley of Morgan County, the mountain areas west of Wales and Ephraim Canyon in Sanpete County, Cedar Mountain in Iron County, and an area out from Mantua, Box Elder County, were most severely damaged. Less severe injury occurred in parts of Cache, Rich, Summit, and Weber Counties. Populations of L. hesperius in IDAHO decreased in 1975; heavy populations were found only in eastern Elmore County. L. hesperius severely damaged crested wheatgrass in Lawrence and Jackson Counties, SOUTH DAKOTA.

BLUEGRASS BILLBUG (*Sphenophorus parvulus*) continued to spread in 1975, the worst damage occurred in Salt Lake and Davis Counties. Infestation spread in Cache County and was reported from Provo, Utah County, Brigham, Box Elder County, and Ogden, Weber County. Damage and population levels in MARYLAND have continuously increased over the past 4 years. About 800 acres of commercial sod had moderate to heavy populations and losses amounted to \$300,000. Damage estimates for home lawns are expected to be much higher than commercial losses.

Populations of MORMAN CRICKET (*Anabrus simplex*) increased yearly in IDAHO. Except for some small grain in Power County, damage was limited to range: 25,000 acres near Midvale, Washington County; 15,000 acres near West Mountains, Adams County; 8,000 acres in southern Gem County; 1,000 acres in northern Ada County; 1,000 acres at Danskin Peak; 3,000 acres at Bennett Mountain; 2,000 acres at Lester Creek; 6,000 acres in Lime-Deer Creek areas of Elmore County; and 40,000 acres in east Rockland, Arbon Valley, and Bull Canyon areas of Power County. Surveys in WASHINGTON showed over 7,000 acres were infested in Okanogan County. *A. simplex*, *A. longipes*, and *Peranabrus scabricollis* (coulee cricket) were present. Mormon crickets were light in Ferry, Pend Oreille, and Spokane Counties. MOLE CRICKETS (*Scapteriscus* spp.) remained major pests of turf and pastures in FLORIDA. Damage and control costs were estimated in the millions of dollars. Activity was greater partly because of a mild 1974-75 winter. Insecticide restrictions made control more difficult, populations were heavier and costs increased.

GRASSHOPPERS (*Melanoplus* spp.) hatched in MISSOURI in mid to late June throughout the south-central and southwest areas. Up to 100 first instars per square yard occurred in the hatching areas. Nymphs and adults 5-33 nymphs per square yard occurred in pastures in the south-central area during July and August. Pastures throughout the southern areas were damaged but very few were treated. Grasshopper populations peaked in KENTUCKY at approximately 400 nymphs and adults per 100 sweeps. Damage to pastures and turf was about the same as in 1974.

BERMUDAGRASS MITE (*Eriophyes cynodoniensis*) was the principal arthropod pest of bermudagrass in FLORIDA, being a problem on turf in many areas. It was present year-round in most regions; populations were generally heaviest during the spring.

Highlights

ALFALFA WEEVIL infestations were later and not as severe in the western States as in 1974, and has increased in importance in timothy-alfalfa fields in Washington. Infestations extended their range in New Mexico. Damage to alfalfa was worse than in 1974 in Illinois and elsewhere in most eastern States. SOUTHERN CORN ROOTWORM infestation on alfalfa extended into many new counties in North Dakota. VARIEGATED CUTWORM severely damaged alfalfa in Oklahoma, Kansas, Iowa (worst in 12 years), Nebraska, and South Dakota. ALFALFA BLOTCH LEAFMINER populations extensively damaged alfalfa in New York and Pennsylvania; decreased sharply in Maine. MEADOW SPITTLEBUG was heavy on forage legumes in Kentucky and Illinois.

ALFALFA WEEVIL (*Hypera postica*) egg laying, hatch, and larval development in NEVADA were generally 2-4 weeks later than usual due to a cool, wet spring. The first eggs were not found in the major alfalfa producing areas of the central, northern, and western counties until May. No larvae were noted in these areas until the middle of May. Larval infestations did not develop as rapidly or explosively as in several other years but over an extended period and at a later date. Larvae were much lighter than in previous years, generally averaging less than 75 per sweep, except in one area of White Pine County where 200+ per sweep were noted. Peak larval populations did not occur until mid-June. Economic infestations occurred on much less acreage than previous years and treatment was not required in many fields. Some fields were treated in May and early July but most were treated in June. About 34,000 acres of hay were treated in 1975 compared to about 61,000 acres treated in 1974. Comparable reduction of larval infestations, damage, and treated acreage also occurred in seed fields. Overall, the light populations, light damage, and low acreages needing treatment in 1975 were unusual when compared to previous years.

Alfalfa weevil damage occurred late in UTAH due to the cool, wet, late spring. Much of the first crop was harvested in the northern and central area before control was required. Some untreated acreage before or following first cutting sustained conspicuous injury. The loss of tonnage and quality was less than for an average year. Alfalfa weevil increased in importance in WASHINGTON in the last two years on timothy-alfalfa fields. Some 15,000 acres were treated in Kittitas County. Up to 10 per sweep were found for the first time in the Warden area of Grant County. This suggests weevils were present in the area before 1975. Infestations were light throughout Franklin and Adams Counties. Populations in Walla Walla County were the heaviest in the State with up to 60 per sweep in some fields. Control was effected with the use of pre-bloom insecticides. Alfalfa weevil was sampled weekly in IDAHO from July 2 to August 20 on 19 fields in Lincoln, Blaine, Gooding, Jefferson, Butte, Teton, Madison, Bonneville, Fremont,

Caribou, and Bingham Counties. No economic levels were found in any field, the highest count was 20 per sweep. Populations were delayed all season due to the late spring. The first larval populations in Canyon County usually are found April 15, but during 1975, the first populations were found April 22. Only 20 percent of normal treatments were made during 1975.

Alfalfa weevil larval activity was noted in DeBaca County, NEW MEXICO, during mid-March. Second and third-instar larvae were noted in one of 5 terminals. Adults were collected in southern Chaves County on April 23 for a new county record where populations were light in wide areas during May. Specimens were taken in Roosevelt County April 30 and Eddy County, May 2, for new county records. Larvae ranged 100-250 per 25 sweeps in alfalfa in Valencia and Quay Counties by May 30. Up to 450 larvae per 25 sweeps were taken June 6 and 600 larvae and 100 adults per 25 sweeps in Valencia County 9 days later. Infestations were heavy on late second and third alfalfa cuttings in southern Bernalillo County. The infestation nearly disappeared from Quay County alfalfa until October when larvae were light. This was very late in the season for larvae in that area. One freshly emerged adult was taken from a haystack at the university in Dona Ana County December 12. This was a new county record and extended the distribution to south-central New Mexico.

Alfalfa weevil surveys in January showed 100-340 eggs and 0-10 larvae per square foot in OKLAHOMA. Numerous larvae began to hatch in the southwest area the last week of February and in most areas the first week of March. Larvae were moderate to heavy on alfalfa in the southern area by mid-March, the northern area by early April, and the Panhandle by mid-April. Adults were heavy, up to 100 per 10 sweeps, in the central area in early and mid-May and heavily damaged regrowth following the first cutting. Larvae parasitized by Bathyplectes curculionis (an ichneumonid wasp) during April ranged 1-67 percent and in May ranged 14-100 percent. Weevil infestations had mostly disappeared by the end of May. Adults returned to alfalfa fields the first week of October in Grant County and remained light until mid-November. The first fall eggs were found in Stephens County on November 6 at 5 per square feet.

Alfalfa weevil caused less damage to KANSAS alfalfa in the spring of 1975 and less acreage was treated than in 1974. Egg hatch began as early in 1975 (late February in the southeast) as in 1974, but was delayed in March by cooler weather. Populations were somewhat lighter than in 1974 possibly due to less spring egg laying. Growing conditions for alfalfa were more favorable and treatments were applied with better timing than in 1974 due to better supply of pesticides. There was more use of the most effective pesticides in 1975 than in 1974.

Larval populations began a rapid increase the last week of April in southeast NEBRASKA. On April 29, larvae averaged 127.4, adults 5.1 per 100 sweeps in Otoe County. Larvae ranged 105-4,840 (averaged 1,531) and adults 0-250 (averaged 50.4) per 100 sweeps 7 days later. Larval populations peaked in mid-May, pupation began increasing slowly in the central and northeast Nebraska areas. In Dawson County May 7 larvae ranged 0-171, (averaged 53.4) and adults 2-27, (averaged 8.2) per 100 sweeps in Dawson

County May 7. In Stanton, Cuming, and Madison Counties larvae averaged 3.8 and adults 5.8 per 100 May 8. Populations peaked later in Dawson County, about June 5-12; alfalfa weevil larvae were about 700 per 100 sweeps. Populations were lighter in Dawson County than in 1974. The highest populations in 1975 were in the southeastern, eastern, and southern districts. Larvae per 100 sweeps by county (one field): Otoe 4,840, May 7; Thayer 4,930, May 22; Washington 4,916, May 20; Franklin 5,600, May 29; Stanton 3,200, May 29. Populations are expected to be damaging again in 1976.

Alfalfa weevil populations were lighter in SOUTH DAKOTA in the West River Counties in 1975. The eastern strain caused isolated damage in the southeastern area in 1975 from Interstate Highway 90 south. Populations decreased in irrigated alfalfa in McKenzie County, NORTH DAKOTA; averaged 132 per 100 sweeps on June 27. By July 11, larval infestations in irrigated second-cutting alfalfa in McKenzie and Williams Counties averaged 158 per 100 sweeps. Adults were collected in Dickey, LaMoure, and Ransom Counties for new county records.

Alfalfa weevil larvae from overwintering eggs first were detected in WISCONSIN about May 12; however, surveys indicated 98.6 percent winter mortality of eggs. Spring egg laying began by May 14, and larvae were detected in the field about May 20. Late in May, southern county larvae averaged 10 (up to 130) per 50 sweeps, and adults averaged 4 (up to 11) per 50 sweeps. In Door County, counts averaged 4 (up to 12) per sweep; tip damage averaged 40-50 percent with 80 percent in some fields. Several fields were treated. A timely harvest killed the larvae before significant feeding could occur, but wet weather early in June postponed harvest of many fields and allowed many larvae to pupate by mid-June. After mid-June, only traces of adults or larvae were on alfalfa. Population increases showed signs of leveling off for the first time in MICHIGAN.

Damage to alfalfa in ILLINOIS has been worse each year. In 1975, 347,000 acres were treated as compared to 191,000 in 1974. The earliest hatch in 1975 occurring during the week of March 22 in Washington County. First and second instar larvae were found in one of ten fields surveyed. Alfalfa height ranged 2-4 inches and weevil populations averaged less than one per 50 tips. Tip feeding averaged 20 percent and larvae 40 per 100 tips in Washington County 7 days later. By the week of April 14, tip feeding in southern areas reached 90 percent with 4.5 larvae per tip. Some fields were treated. Height of the alfalfa ranged 4-8 inches. By the first of May populations south of Interstate Highway 70 were up to 115 per sweep with severe damage in all untreated fields. Economic damage covered, approximately, the area south of Interstate Highway 74 with moderate to light damage northward.

In IOWA alfalfa weevil eggs were observed at 62 per square foot on alfalfa in Des Moines and Lee Counties during the week ending April 25. First-instar larvae were present on 2-inch tall alfalfa in Fremont County. Larvae increased in size and counts on 5-inch tall alfalfa in southwestern county fields during the week ending May 2. Larvae ranged 1-3 per stem in Fremont and Page County fields. Treatments were applied during the week ending May 9.

Damage increased in the southern area during the week ending May 16. Larvae ranged 1-4 per stem in Decatur County. Alfalfa weevil eggs per square foot in MISSOURI during late winter and early spring ranged by area: Southwest 100-234; south-central 160-239; central 34.5-160; northeast 47-92.5; north-central 48-756.5; northwest 28-131.5. Adults were active in the southern area during the last 14 days in February. Larvae appeared the first week in March. Larvae 2-11 per 10 stems in southern areas from early to mid-March, Ranged 25-59 per 10 stems in late March. Larvae ranged 5-25 per 10 stems in early April in northern areas; 25-140 per 10 stems in the southern areas in mid-April with 50-100 percent of the terminals damaged. Controls were initiated in the south. Heavy populations and larval damage occurred in the northern areas during late April and early May. Larvae damaged most untreated fields by mid-May. Adult emergence occurred in mid to late May in the southern areas.

Infestation was lighter in ARKANSAS than in 1974; however, more than half of the acreage required control. The first larvae in the northwest area were found March 21. The heaviest counts in northwest ARKANSAS ranged 1,200-1,500 per 100 sweeps the last week in April. "Hatch-out" in TENNESSEE began about mid-February in many fields and by mid-March counts of larvae ranged 24-26 per 50 tips. The first population at or above control levels was in Tipton County, April 18. From April 18 until May 16, about 20 percent of the fields surveyed across the State were at or above control levels.

This was a major pest of alfalfa in KENTUCKY. Egg laying peaked during the last of January to the first of February in the central area, 30-40 eggs per square foot noted. Larvae began to increase during early April, nearing control levels in the southern areas in mid-April and during late April in the central areas. Controls were being applied in the northern areas by early May. Weather delayed control efforts in many areas. By May Bathyplectes curculionis (an ichneumonid wasp) parasitized 5-50 percent of the population. Hypera postica adults damaged several alfalfa fields in the southern areas immediately after the first cutting.

Larvae (81 percent first instar) were present in INDIANA at 4.7 per inch of stem in one southwest district field by April 14. By April 21, larvae averaged 5.9 per stem in southwest district fields. Egg laying in alfalfa occurred by the first week of April 1975 in OHIO. Cool weather throughout the month delayed significant alfalfa plant growth and egg laying. Larvae were first reported from the south-central area April 17, populations peaked about May 27. Up to 6,000 per 100 sweeps or 4.4 per stem were noted in fields where cutting was delayed, many fields or parts of fields appeared "frosted." The incidence of damage increased over 1974 with spotty damage to late-cut fields in three-fourths of the State but was uniformly severe in the northwest quarter. Pupation was well underway by June 1, and new adults were present by June 13.

Based on fields sampled in VIRGINIA, 20 percent of alfalfa tips were infested on March 28, 1975. The average estimated defoliation was 1.7 percent. Weevils were still too small to cause serious damage and growers were advised not to treat until damage was

greater. The action threshold of infestations (25 of 50 tips infested) was exceeded on 22 percent of the sample and 14 percent of the acreage. By April 4, infested tips were noted at 26.9 percent but the average estimated defoliation was only 1.1 percent. By April 11, tip infestation was 33.3 percent with an average estimated defoliation of 1.9 percent. Twenty-five percent of the acreage exceeded the action threshold. On April 18, 41.8 percent of the tips were infested and the average estimated defoliation was 4.9 percent. By April 25, 43.2 percent of the tips were infested. The average estimated defoliation was 12.6 percent and 41 percent of the acreage exceeded the action threshold. On May 2, 61.4 percent of the tips were infested and there was an average estimated defoliation of 16.5 percent. Sixty percent of the acreage exceeded the threshold. By May 9, 72.7 percent of the tips were infested and the average estimated defoliation was 17.3 percent. Eighty-five percent of the acreage exceeded the threshold. By May 23, 93.7 percent of the tips were infested and the average estimated defoliation was 39 percent. All fields in the sample exceeded the threshold. Alfalfa weevils completed their development in Rockbridge County by May 27, 1975. In pure stands, adults averaged 4 per sweep in one field each in Augusta and Botetourt Counties. Damage was heavier this year, probably due to the 1973 collapse in parasite populations.

Alfalfa weevil was found throughout MARYLAND but significant injury occurred only in Carroll, Montgomery, Frederick, Howard, Prince Georges, St. Marys, and Washington Counties. Damage was spotty and moderate to heavy in these areas and about 7,000+ acres required controls. Seasonal development of the weevil was slower in 1975 than in years past due to the extended cool wet spring. Light damage (5-8 percent tip injury) was evident in central counties in late April. These levels increased slowly in early May and exceeded 50 percent tip damaged levels by May 12. Damage was well above normal by mid-May in the central and southern counties. Heavy populations in May were detected in fields that had been previously free of economic damage for the past 6 years. This trend is expected to continue in 1976. Larvae were present in most areas of DELAWARE on alfalfa but were not heavy enough for controls. The population in southeastern PENNSYLVANIA sharply increased in 1975, and damage was heavy. The population of the southwestern counties has been stable over the past 5 years with moderately heavy damage. Reports in NEW YORK from Columbia, Oneida, Broome, Steuben, Seneca, Cayuga, and Tomkins Counties indicated that weevil activity decreased from 1974.

PEA LEAF WEEVIL (*Sitona lineatus*) adults overwintering in IDAHO alfalfa became active the second week of April. Adults averaged 60-300 per square meter in Latah County, and there was little winter mortality. By April 25, adults had fed heavily on alfalfa, up to 12 weevils per crown in the fields. Early season growth of alfalfa was slowed by feeding. Alfalfa fields still averaged 2 adults or more per sweep in the Potlatch area, Latah County, in late May. Adult flights had occurred in mid-May when peas were being planted but before they were up. Adults settled in alfalfa and finally moved to peas about June 6. In September, populations reached numbers exceeding 200 per sweep in some alfalfa fields adjacent to pea fields in Idaho County.

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) adults were collected on alfalfa in Billings, Stutsman, Burleigh, Dunn, Grant, Griggs, Logan, McIntosh, Mercer, Slope, Renville, Sioux, Stark, and Traill Counties for new distribution records in NORTH DAKOTA during 1975.

ALFALFA SEED CHALCID (Bruchophagus rodii) were above average in alfalfa in Grant and Adams Counties, WASHINGTON. The average seed damage in these areas was 8.22 percent, with several fields higher than 15 percent.

VARIEGATED CUTWORM (Peridroma saucia) was moderate to heavy on alfalfa in some areas during May. Damage occurred in the north-central, central, south-central, and east-central areas. Heavy infestations were found in many alfalfa fields throughout the eastern half of KANSAS and caused delays in regrowth after the first cutting; several thousand acres were treated. This species severely damaged alfalfa in IOWA in 11 western and southern counties. The first observation of larvae preventing regrowth on alfalfa stubble in Shelby County was made June 4. Additional damage reports were received from Cass, Decatur, Harrison, Mills, Page, Pottawattamie, and Shelby Counties during the week ending June 13. Damage increased and pupae were present in Harrison County fields during the week ending June 20. Reports of damage decreased until the week ending August 1 when 5-10 larvae per square foot prevented regrowth in fields in Harrison and Woodbury Counties. Chemical treatments were generally ineffective. This outbreak was the most severe in more than 12 years. P. saucia was unusually heavy and caused delay of regrowth alfalfa after the first cutting in the eastern third of NEBRASKA. Counts per 100 sweeps in one field by county on May 23: Cass 22, Clay 80, Johnson 48, Richardson 80. Movement then occurred into adjacent row crops and damaged corn, soybeans, and sorghum. One Pawnee County field averaged 45 per square foot and was moving into a nearby corn field. Controls failed due to late application. Young alfalfa stands were severely damaged in southeastern SOUTH DAKOTA and established stands were infested. Larvae were more than 3-4 per square foot. Controls were applied.

CLOVER ROOT BORER (Hylastinus obscurus) continued as one of the most important limiting factors to OREGON red clover production in the Willamette Valley. Adult dispersal began May 1-2 in Washington, Yamhill, and Polk Counties during mid-May in eastern Marion County. Flight activity peaked in late May and early June.

Serious REDBACKED CUTWORM (Euxoa ochrogaster) populations in IDAHO developed in Boundary County with 15-20 percent of the alfalfa damaged.

ALFALFA BLOTCH LEAFMINER (Agromyza frontella) adults were first seen on NEW YORK alfalfa May 15 in Columbia County, no pin hole injury noted. Widespread infestations were reported from Oneida, Broome, and Cayuga Counties during early June. Extensive damage to the first alfalfa cutting in Chenango County was noted on June 23. Second generation pinholing with blotch mines starting to appear was reported June 11 from Broome County. Heavy infestations were

observed in Rensselaer County July 10, light second generation activity was reported for Steuben County July 15. White mines on second growth in Broome County were making fields look gray July 18. Agromyza frontella continued as a major pest in PENNSYLVANIA. Adults were heavy in the southeastern counties in late June with 100-200 adults per sweep in some fields. Centre County had 4 generations, during early June, July, August, and early October, 4 generations were present in Centre County. Parasitism was heavy in the August generation. Populations declined sharply in MAINE, only rarely was a 20 percent leaf infestation noted. Dry hot weather allowed harvesting on schedule which sharply reduced infestations.

MEADOW SPITTLEBUG (Philænus spumarius) nymphs in IOWA first damaged red clover in Poweshiek County during the week ending June 6, averaging 2 per stem. Up to one per stem was found on alfalfa in Cass, Clarke, Johnson, and Marion Counties. Populations were more widespread in 1975 than in 1974. A few fields were treated. Adults in KENTUCKY were heavy on forage legumes by mid to late July with counts of 350 or more per 100 sweeps in the central areas. The first nymph of the season in ILLINOIS was found the week of April 14 in Washington County; averaged less than one per 100 stems. By the first week of May, populations were up to 40 per 100 stems, ranged 0-40 and averaged 5 per 100 stems in several fields in the central district. The first adults were found the last week of May in Washington County. Adults were very light in the fall, averaging over one per sweep in only 3 of the 23 counties surveyed. Populations in the northwest district were the heaviest with an average of 9.8 adults per 100 sweeps. Over 2,300 acres were treated for adult control.

LYGUS BUGS (Lygus spp.) population trends and infestations on seed alfalfa generally followed those of 1974. Populations increased rapidly in late July and early August, adults and nymphs averaged up to 30 per sweep. Treatments were made from June through August with the majority applied in July. In NEW MEXICO adults and nymphs ranged 6-8 per 25 sweeps in Chaves County alfalfa at mid-May. Populations in Dona Ana County were much lighter. Up to 200 per 25 sweeps were noted in Eddy and Quay Counties during early June with much associated yellowing. More than 200 per 25 sweeps were noted in some fields in Curry and Roosevelt Counties, up to 1,000 per 25 sweeps were observed on range forbs near these fields. Populations up to 2,500 per 25 sweeps were common June 27, up to 500 per 25 sweeps were noted in Quay County; fields were yellowing at this time.

L. hesperus and L. elisus in Walla Walla County, WASHINGTON, were much heavier than average. Damage to forage legume seed, up to 25 percent damage was heavier than in past years. Populations in Yakima and Franklin Counties were also above average. Controls were satisfactory through the use of broad spectrum insecticides. Populations were about average in Grant and Adams Counties. Excellent control was achieved with integrated control programs. Populations were normal in IDAHO but were more difficult to control using recommended pesticide in alfalfa seed growing areas.

ALFALFA PLANT BUG (Adelphocoris lineolatus) ranged 10-100 (averaged 60) per 100 sweeps in Grant, Morton, and Sioux Counties, NORTH DAKOTA, July 18, 1975. By August 22, infestations ranged up to 5,000 per 100 sweeps in second-cutting alfalfa, averaged 3,500 per 100 sweeps in Traill and Griggs Counties.

PEA APHID (Acyrtosiphon pisum) ranged 2-5 per square foot in Chaves County alfalfa by January 17, and remained on young alfalfa through most of February; ranged 4-10 per square foot in Chaves County by March 14, 1-2 per square yard was noted in De Baca County. Ranged 50-100 per 25 sweeps in Eddy County April 14 and up to 300 per 25 sweeps by April 21. Populations were heavy as late as April 25 in mountain valleys of Eddy County, predators were still inactive. Populations of 500+ per 25 sweeps were common. Treatments were applied in Eddy, Chaves, and Luna Counties the week of May 2. More than 500 per 25 sweeps were noted in Eddy and Chaves Counties May 9. Populations ranged 40-50 per sweep in Roosevelt County May 20.

Infestations on seed alfalfa in Churchill, Humboldt, Lander, and Pershing Counties, NEVADA, received chemical treatment from June through August with most treatments applied in July. As in 1974, populations were heaviest in Pershing County, with up to 1,000 per sweep with many fields ranging 300-500 aphids per sweep. These abrupt increases occurred about the second week of July and decreased later in the month to continuing but lighter economic infestations. Similar infestations of A. pisum on hay alfalfa occurred in Humboldt County and with BLUE ALFALFA APHID (A. kondoi) in 7 other counties. Economic hay infestations occurred in the southern area of the State in late March through May and in the central, western, and northern counties from late May through July. Populations ranged from 150+ aphids per crown to 1,000+ per sweep on taller plants. Surveys for A. kondoi were negative after July. In some instances chemicals did not give adequate control for either species, especially on hay.

Surveys for A. pisum in IDAHO were conducted in Lincoln, Blaine, Gooding, Jefferson, Butte, Teton, Madison, Bonneville, Fremont, Caribou, and Bingham Counties in 19 fields where populations did not reach economic levels, except for small pockets in the Snake River Plains. Control problems developed in the alfalfa seed growing areas in Canyon and Owyhee Counties. A. pisum ranged 10-250 (averaged 75) per 100 sweeps in forage in Morton and Sioux Counties, NORTH DAKOTA. Populations on alfalfa were non-economic throughout the season in SOUTH DAKOTA.

Eggs of A. pisum began hatching on alfalfa April 24 in Jefferson County. Counts were light through May and June, seldom exceeding 10 per sweep; but at the end of June and early in July, a rapid increase occurred in the eastern counties. Counts in second-growth alfalfa and in peas soared to 200+ per sweep in some fields, being highest between the Columbia and Dodge County lines and Lake Michigan where nearly all controls on peas occurred. Some southwestern alfalfa was treated. Except for the short-lived outbreak in early July, natural control factors, principally parasitism by braconids averaging 35-50 percent, held A. pisum numbers mostly under 15 per sweep.

Acyrtosiphon pisum was on OKLAHOMA alfalfa from late February through November. Infestations were heavy in some areas in April and early May, late August, and mid-November, damage was light in most areas all season.

GRASSHOPPER adults and nymphs ranged up to 2,000 per 100 sweeps on forage legumes in central KENTUCKY. Infestations were lighter than 1974 in most fields but some heavier populations were noted.

BROWN WHEAT MITE (Petrobia latens) caused severe browning on alfalfa in Union, Harding, and Quay Counties in mid-April.

SOYBEANS

Highlights

SALTMARSH CATERPILLAR was abundant and difficult to control in Maryland and Delaware. BEET ARMYWORM was reported from the entire Coastal Plain area. VELVETBEAN CATERPILLAR was the significant re-occurring problem in the Florida panhandle and appeared the earliest in 20 years in Alabama, triggering early damage state-wide. GREEN CLOVERWORM was light in Oklahoma, Illinois, and Wisconsin but seemed to be increasing in Indiana. MEXICAN BEAN BEETLE exceeded previous damage in ALABAMA and damaged 12,000 acres in Tennessee. A greater than average overwintering population was noted in North Carolina. Infested fields were more common in Indiana. Sporadic outbreaks occurred in Delaware.

SALTMARSH CATERPILLAR (Estigmene acrea) and Epargyreus clarus (silverspotted skipper) were very heavy on MARYLAND soybeans in Wicomico, Dorchester, Caroline, and Somerset Counties September 10-21. Ranged 2-10 per foot of row with 10-40 percent defoliation in 20 percent of the soybean acreage on the lower Eastern Shore. Control was difficult. Several fields (300+ acres) in Sussex County, DELAWARE, were defoliated and 2 or 3 spray applications were required for control.

VARIEGATED CUTWORM (Peridroma saucia) damaged several outside rows of soybean fields in the east and southeast districts of NEBRASKA bordering heavily infested alfalfa. One Cass and 2 Lancaster County fields had 20-25 border rows stripped. Counts averaged 8-10 per linear foot of row. Soybeans 5 inches or more recovered but seedlings were destroyed.

BEET ARMYWORM (Spodoptera exigua) damage appeared during mid-July in NORTH CAROLINA on sandy soils in the southern counties where soybeans were stunted due to dry June weather. About 60 acres were treated and control was achieved. By mid-August it was reported from the entire Coastal Plain, with the heaviest damage in the Scotland and Robeson County area with 20 acre spots as far north as Halifax County. About 3,500 acres were treated in the Scotland County area.

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) was the only significant re-occurring problem in the panhandle of FLORIDA. The first larvae were found on soybeans at Quincy, Gadsden County,

June 11. Buildup was 14 days early in mid-July and remained heavy until mid-September, several treatments per field were needed. Economic infestations of velvetbean caterpillar on soybeans in Alachua and Levy Counties occurred in late summer; controls were needed. During mid to late September, a fungus pathogen, Nomuraea rileyi, was effective in controlling populations in the northern area. The first moths in ALABAMA were noted July 7, 1975 in Tuscaloosa County, some maturing larvae were noted in Marengo County. This is much earlier than any previous observation during the past 20 years. Indications are that adults and pupae overwintered and triggered an early and damaging condition statewide. Heavy late season populations defoliated plants and damaged young bean pods. The first occurrence in MISSISSIPPI was noted the week ending August 8 on soybeans in Walthall and Panola Counties at less than 0.1 per row foot. By mid-September, this was the most dominant defoliator, up to 30 percent of late-planted soybeans in Noxubee County. Heavy defoliation in NORTH CAROLINA did not occur for the second year in a row. Only small populations occurred in most southern Coastal Plain counties and were below the detection level in northern counties.

GREEN CLOVERWORM (Plathypena scabra) was found on OKLAHOMA soybeans from mid-June through September. It was light all season in most areas but heavy in Garvin County in mid-July and in Wagoner County in mid-August. Third to first instar larvae averaged 13 per row foot on soybeans in Kossuth County, IOWA, during the week ending August 22; this was the first occurrence of the season. Larvae ranged 6-18 per row foot in Cerro Gordo, Emmet, Hancock, Kossuth, Palo Alto, Winnebago, and Worth Counties during the week ending August 29. Some treatments were applied. Populations decreased by the week ending September 5. Damage in 1975 was slightly more than in 1974. P. scabra was a minor pest on soybeans in ILLINOIS in 1975. Up to 10 per foot of row were noted during the week of August 11 in Grundy and Livingston Counties and 20 per foot of row noted the week of August 25 in Clark County. Approximately 87,000 acres were treated.

Green cloverworm adults were first observed in WISCONSIN around house lights in Dane County in late June, and up to one larva per 10 sweeps was noted in fields in Walworth and Jefferson Counties July 1, 1975. By August, up to one larva per 10 sweeps was found in many soybean fields in the south-central and southeast districts. In August, adults increased. Larvae up to 4 per row foot, appeared in Kenosha County and up to 2 per row foot were found in Racine, Walworth, Waushara, La Crosse, Trempealeau, and Grant Counties August 20. Up to 20 percent defoliation occurred on soybeans in Walworth County. Fewer than one larva per row foot and less than 10 percent damage was noted in the southeastern counties by September 5. Larvae, 2 per 10 sweeps were noted in Rock County on September 9 with fairly heavy parasitism. Populations seemed to be increasing in INDIANA. The apparent low level of disease and parasitism in the species and the larger populations make it a possible problem in 1976.

SOYBEAN LOOPER (Pseudoplusia includens) infestations occurred more often in FLORIDA in 1975 than 1974 in western Alachua County soybeans. Infestations were below the economic threshold. Populations were light in the panhandle area, occasionally reaching the threshold in some fields. Infestations appeared in early July in Marengo County, ALABAMA. About 800,000+ acres of beans were treated 2-3 times.

MEXICAN BEAN BEETLE (*Epilachna varivestis*) overwintered adults entered soybean fields in Calhoun, Madison, Cherokee, and other counties in ALABAMA as early as June and became the more important pest in many fields and exceeded the damage in any previous year. This species damaged 12,000 acres of soybeans in TENNESSEE in 5 counties in the central area; 4,500 acres were treated. A spot check in NORTH CAROLINA soybean fields indicated a greater than average overwintering adult population in localized fields. Eggs and larvae were noted by June 13. About 100 acres were treated by July 1. Observation of 2,078 fields September 22 to October 1, 1975, in 28 counties noted 20 fields with 15+ percent defoliation over 60 acres in Currituck County.

The earliest Mexican bean beetle adults were observed May 30 in untreated soybean fields in Lawrence County, INDIANA, when the beans were 4-5 inches tall with 1-2 trifoliate leaves. The first eggs were noted June 3-9, the first larvae June 14, first pupae and new adults were noted July 7. Eggs increased July 21 which probably marked the beginning of a second egg laying period. Defoliation in this field reached 40 percent and 70 percent in a second field. Infested fields were more common in 1975 than in 1974 and fields more heavily infested in the susceptible area south of United States Highway 40. Small fields in wooded, hilly areas were the most consistently infested. Fields with 100 percent defoliated spots were observed in these areas. Sporadic outbreaks occurred in several areas of DELAWARE. One notable exception from distribution in past years on soybeans was the northward movement into northern Kent and southern New Castle Counties where many fields had extensive defoliation and required control.

BEAN LEAF BEETLE (*Cerotoma trifurcata*) adults were first observed in KENTUCKY on old soybean stubble in early April. There was light early June damage to seedling soybeans in the western areas. Populations continued to increase through the growing season, but little damage occurred.

A THRIPS (*Sericothrips variabilis*) was first reported on soybeans in KENTUCKY in early June. By mid to late June heavy populations, 50-60 per leaflet, were present in the western areas. Populations decreased, 2-3 per leaflet, rapidly in late June. *Orius* spp. (flower bugs) probably aided in the control of thrips. *Orius* spp. increased rapidly in June, peaking in late June and early July. A mild winter in ILLINOIS allowed *S. variabilis* to overwinter in heavier than usual populations and resulted in an earlier than usual buildup by late May and early June. In the second week of June infestations ranged 50-150 per leaflet. After 14 days a decrease to 1-8 per leaflet was noted. Some fields were treated. Damaged soybeans recovered by the end of June. Actual damage was a combination of thrips, herbicide injury, and cool, dry weather. An estimated 132,000 acres were treated. In INDIANA, this species reached economic proportions, with up to 50 percent of the leaf surface infested in some southwest district fields.

GREEN STINK BUG (Acrosternum hilare) in VIRGINIA was heavy in a 5-acre field of soybeans in Westmoreland County on August 13. Infestations were spotty statewide but some fields were damaged. On September 11, only one of the 113 fields sampled in James City, Charles City, and Westmoreland Counties exceeded the threshold of 20 or more late instar nymphs or adults per 30 row feet. Averages per 30 row feet by county: Westmoreland 2.4, Charles City 1.1, and James City 1.1 week of September 11. None exceeded the threshold during the rest of the season.

SOUTHERN GREEN STINK BUG (Nezara viridula) was the predominant species infesting soybeans in northern FLORIDA. Generally it was below economic levels in Levy County but some fields were at one per foot of row, requiring treatments. Untreated fields were heavy (3-6 per foot of row) in the Quincy area during the first half of September. Occurrence was light to moderate in all Jackson County fields during early September, treatments were required in only 10 percent of the fields.

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) was light on most OKLAHOMA soybeans in 1975 but 10-16 percent girdled plants were found in some areas of McCurtain and Haskell Counties. Samples averaged less than 5 per 25 sweeps on soybeans in Delta, Hill, and other southern MISSISSIPPI counties before mid-August. Populations increased rapidly in mid-September to 16.6 per 25 sweeps in Franklin County, 8 per 25 sweeps in Lawrence County, 10 per 25 sweeps in Noxubee County, and 3.5-5.5 per 25 sweeps in Washington, Bolivar, and Quitman Counties. By late September, infestations were 10.5 per 25 sweeps in Sunflower County, 11.75 per 25 sweeps in Bolivar County, 16 per 25 sweeps in Washington County, and 15 per 25 sweeps in Panola County. This species damaged over 500 acres of TENNESSEE soybeans in 5 reporting counties in TENNESSEE. No controls were applied.

A COREID BUG (Alydus pilosulus) was heavy and damaged OKLAHOMA soybeans in Roger Mills County in mid-October.

SOYBEAN CYST NEMATODE (Heterodera glycines) was collected on soybeans in OKLAHOMA in LeFlore and Haskell Counties on September 23, 1975, for a new State and county record. This nematode was found to be infesting soybean fields in Franklin, Coffee, and Bedford Counties in TENNESSEE.

PEANUTS

Highlights

In Florida LESSER CORNSTALK BORER was a major pest in some peanut fields. FALL ARMYWORM was the most widespread pest on peanuts followed by VELVETBEAN CATERPILLAR.

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) was a major pest of peanuts in some FLORIDA fields in the sandy areas of Alachua and Levy Counties. In late August, populations varied from very light to moderate. About 10 percent of the Jackson County fields were treated. This species was responsible for 6 percent of the total insect loss statewide. Populations in ALABAMA were extremely

light due to the rainy season and other unfavorable weather conditions. Elasmopalpus lignosellus damaged OKLAHOMA peanuts from early July through September. Damage in Marshall County by generation: First, up to 57 percent; second, up to 53 percent; and third up to 87 percent.

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) was the second most important peanut pest in FLORIDA and caused about 24 percent of the total loss due to insects. The first appearance in Alachua and Levy Counties occurred during late August and early September, usually below special treatment levels. Infestations became economic on some late planted fields. For the first time in 20+ years in ALABAMA, this pest was more important than Elasmopalpus lignosellus (lesser cornstalk borer) and/or Heliothis zea (corn earworm). Although not a serious area wide pest in the 9 southeastern counties, it was of economic importance in isolated areas.

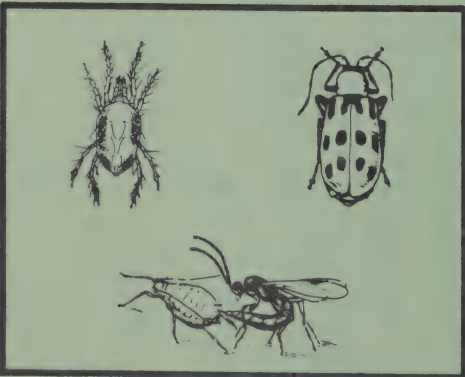
FALL ARMYWORM (Spodoptera frugiperda) was the most widespread problem in FLORIDA peanuts. Larvae began increasing to economic levels during early August in Jackson County. About half the acreage required at least one treatment, and a very few fields required 3 treatments. This species accounted for nearly half of the 8.5 percent yield loss caused by insects.

REDNECKED PEANUTWORM (Stegasta bosqueella) damage was relatively light in OKLAHOMA peanuts in 1975, seldom over 30 percent of the terminals were infested.

TWOSPOTTED SPIDER MITE (Tetranychus urticae) spot infestations in NORTH CAROLINA occurred earlier than usual in 1975 during late June in Northampton County. Suppressed by July rains, damaging populations reappeared during late August and treatment was needed in the northern Coastal Plain until harvest. Around 40,000 acres of peanuts were treated in 1974 and about 55,000 acres in 1975.



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Cooperative PLANT PEST REPORT

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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

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COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

FALL ARMYWORM heavy on planted wheat in Oklahoma, significant on wheat in Kansas. Average counts on seedling alfalfa in Kansas heavier than during last period. (p. 716).

GREENHOUSE WHITEFLY very heavy on some cotton (p. 717) and heavy on citrus (p. 718) in Kern County, California.

Mini-epidemic of tick-borne RELAPSING FEVER reported in 2 southern California counties. (p. 719).

High populations of a MOSQUITO suspected major vector of eastern equine encephalomyelitis virus, in Pocomoke River area of Maryland. (p. 719).

Detection

● First active infestation of GYPSY MOTH west of Mississippi River. This is a new State record for California. (p. 720).

CEREAL LEAF BEETLE is a new State record for Connecticut. (p. 720).

For new county records see page 721.

Special Reports

Summary of Insect Conditions in the United States - 1975

Cotton (pp. 723-725).

Tobacco (pp. 725-726).

Sugar Beets (p. 726).

Miscellaneous Field Crops (pp. 726-727).

Potatoes, Tomatoes, Peppers (pp. 727-730).

Beans and Peas (pp. 731-733).

Cole Crops (pp. 733-735).

Cucurbits (p. 735).

General Vegetables (pp. 735-736).

Deciduous Fruits and Nuts (pp. 736-741).

Citrus (p. 742).

Small Fruits (pp. 742-743).

Ornamentals (pp. 744-745).

New Geographical and Seasonal Distribution Records for Thirty-one Species of Virginia Shield Bugs (pp. 747-751).

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

TOBACCO BUDWORM (Heliothis virescens) - MISSISSIPPI - Moderate populations on jalopeno pepper pods in Wilkinson County. (Cochran).
ARKANSAS - Infested late soybeans throughout Delta area. (Barnes, Wall).

GREENBUG (Schizaphis graminum) - KANSAS - None on 3-inch wheat in Wabaunsee and Osage Counties, trace on 30-inch wheat in Lyon County and on volunteer wheat in Pottawatomie County. Some parasitism in Pottawatomie County. Ranged 0-35 per green leaf on mature sorghum in Douglas County. (Bell).

CORN, SORGHUM, SUGARCANE

DISEASES

MAIZE DWARF MOSAIC VIRUS - KANSAS - Trace on late-planted sorghum in Riley County and 5 percent in Clay County. (Sim).

SORGHUM LEAF RUST (Puccinia purpurea) - KANSAS - Infected 10-70 percent of sorghum plants in Pottawatomie County. Infections generally light to moderate. (Sim).

FUJIKUROI ROT (Gibberella fujikuroi) - KANSAS - Infection percent (and percent lodging) in sorghum by county: Pottawatomie 40-90 (10-45); Shawnee 20 (20). (Sim).

INSECTS

SORGHUM WEBWORM (Celama sorghiella) - ARKANSAS - Reported in late field of sorghum in Craighead County, treatment applied. (Kim-brough).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - PENNSYLVANIA - adults still active, especially in southern counties week ending October 1. Adults per 20 corn plants by county: Centre 3, Susquehanna one, York one. (Jackowski et al.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - PENNSYLVANIA - Larvae present in most fields and nearing overwintering stage week ending October 1. Larvae per 20 corn stalks by county: Centre 6, Lancaster 8-25, and York 1-14. (Shetlar, Maxwell).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Ranged 3-4 per ear in field of corn in Caddo County. (OK Coop. Sur.).

CHINCH BUG (Blissus leucopterus leucopterus) - KANSAS - Immatures and adults 0-12 per plant on mature sorghum in Shawnee County. (Bell).

SMALL GRAINS

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Heavy on planted wheat in Tillman, Harmon, and Pawnee Counties; moderate to heavy in Stephens County and light in Muskogee County week ending October 1. (OK Coop. Sur.). KANSAS - Infestations significant in wheat near Hutchinson, Reno County, and near Wamego, Pottawatomie County. Migration out of pasture into volunteer wheat heavy in one instance in Reno County. (Bell).

SORGHUM MIDGE (Contarinia sorghicola) - OKLAHOMA - Adults up to 50 per head on "sucker heads" in grain sorghum in Caddo County week ending October 1. (OK Coop. Sur.).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Moderate to heavy in bermudagrass pastures in Stephens County week ending October 1. Averaged 2 per square foot in Kiowa County. (OK Coop. Sur.).

FORAGE LEGUMES

DISEASES

POLYGONI POWDERY MILDEW (Erysiphe polygoni) - KANSAS - Infection moderate on about 50 percent of red clover plants in one Shawnee County field. (Sim).

ALFALFA RUST (Uromyces striatus var. medicaginis) - KANSAS - Percent infection on alfalfa by county: Dickinson 5, Ottawa 90, Clay 5, Washington 5. (Sim).

COMMON LEAF SPOT (Pseudopeziza medicaginis) - KANSAS - Affected 10 percent of alfalfa plants in Clay and Washington Counties. (Sim).

LEPTOSPHAERULINA LEAF SPOT (Leptosphaerulina briosiana) - KANSAS - Percent infection on alfalfa plants by county: Geary trace, Clay 5, Washington 5. (Sim).

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Moderate to heavy on alfalfa in Stephens County week ending October 1. Some damage reported on young alfalfa in Alfalfa County. (OK Coop. Sur.). KANSAS - Averaged 6 per square foot on 2-inch seedling alfalfa in Pottawatomie County, averaged 4 per square foot 7 days earlier. Ranged 0-20 in 12 individual square foot counts in field. Heavier on side next to Blue River than on side along county road. (Bell).

A WEBWORM (Loxostege sp.) - OKLAHOMA - Damaged newly planted alfalfa in some areas of Alfalfa County week ending October 1. (OK Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - PENNSYLVANIA - Adults 4.6 per 10 sweeps and 5.1 larvae per 10 sweeps of alfalfa September 29 in Centre County. About 10-20 percent of leaf surface consumed. (Shetlar).

PEA APHID (Acyrtosiphon pisum) - UTAH - Still heavy on alfalfa in some Davis County fields. (Knowlton).

SOYBEANS

INSECTS

BEAN LEAF BEETLE (Cerotoma trifurcata) - MISSISSIPPI - Adult averages per 25 sweeps on 120 acres of late soybeans near maturity by county: Prentiss 12, Lee 28. (Anderson).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - MISSISSIPPI - Averaged 2 per 25 sweeps in Lee County and 9 per 25 sweeps of soybeans in Prentiss County. Population decreased with maturity and cool temperatures. (Anderson).

PEANUTS

INSECTS

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Infestations averaged 33 percent of peanut plants checked in Marshall County week ending October 1. (OK Coop. Sur.).

BEET ARMYWORM (Spodoptera exigua) - OKLAHOMA - Ranged 3-4 per row foot on peanuts in Marshall County week ending October 1. About one-fourth of larvae collected parasitized. (OK Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - OKLAHOMA - Very heavy, up to 1,000 per leaf, in late fields of peanuts checked in Caddo County week ending October 1. (OK Coop. Sur.).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - ARKANSAS - Emergence continued from previously infested cotton squares. (Barnes, Wall).

TOBACCO BUDWORM (Heliothis virescens) - ARKANSAS - Infested top crop of cotton throughout Delta area. (Barnes, Wall).

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) - CALIFORNIA - Very abundant in some cotton fields in Arvin area, Kern County; caused heavy honeydew. About 2,000 acres required treatment. (CA Pest Rpt.).

DECIDUOUS FRUITS AND NUTS

INSECTS

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Four larvae per fruit noted in peaches at Fallbrook, San Diego County. (CA Pest Rpt.).

CITRUS

INSECTS

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) - CALIFORNIA - Heavy on citrus at Mettler, Kern County. (CA Pest Rpt.).

SMALL FRUITS

INSECTS

ROSE STEM GIRDLER (Agrilus aurichalceus) - UTAH - Damaged raspberry canes at Bountiful and Farmington areas of Davis County. (Knowlton).

VIRGINIACREEPER LEAFHOPPER (Erythroneura ziczac) - UTAH - This and other Erythroneura spp. heavy in some home vineyards at Logan, Cache County. Treated 4 times at one location. (Tingey, Knowlton).

FOREST AND SHADE TREES

INSECTS

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Adults still active in all western areas monitored with multilure traps week ending October 1. Recent trap catches by county: Marion 9 at Salem September 21-27; Multnomah 151 at Portland September 18-24 (2 traps); Lane 236 at Eugene September 24-30. (Penrose).

A CUCUJID BEETLE (Silvanus bidentatus) - WEST VIRGINIA - Adults collected under bark of dying sugar maple at Ameagle, Raleigh County, by R.L. Arnold, August 27, 1976. Determined by C.C. Coffman. This is a new county record. (Coffman).

A SCOLYTID BEETLE (Xyleborus affinis) - WEST VIRGINIA - Adults collected at Ameagle, Raleigh County, under bark of dying sugar maple tree by R.L. Arnold, August 27, 1976. Determined by C.C. Coffman. This is a new county record. (Coffman).

MIMOSA WEBWORM (Homadaula anisocentra) - PENNSYLVANIA - Two larvae collected on honeylocust at Ellwood City, Beaver County, by J.L. Miller, September 10, 1976. Determined by K. Valley. This is a new county record. (Henry).

OAK SKELETONIZER (Bucculatrix ainsliella) - MARYLAND - Heavy populations forming cocoons in Prince Georges County for third consecutive year. (U. Md., Ent. Dept.).

A SOFT SCALE (Pseudophilippia quaintancii) - MISSISSIPPI - Infested Pinus taeda (loblolly pine) in Panola County. (Cochran).

MAN AND ANIMALS

DISEASES

RELAPSING FEVER (Borrelia recurrentis) - CALIFORNIA - Mini-epidemic of unusual cluster of 6 tick-borne, Ornithodoros sp. (an argasid tick), cases (ages of patients 14 months to 39 years) reported by Orange and San Bernardino County Health Departments. In early July, 11 members of 3 families shared vacation cabin near Big Bear, San Bernardino County. Evidence of recent rodent and raccoon habitation. Patients became ill 1-2 weeks later. Two cases hospitalized. Diagnoses confirmed by demonstration of spirochete, B. recurrentis, in peripheral blood smears. Treatment with anti-biotic for 10 days effective in all cases. Up to 5 febrile relapses for some individuals. (CA Pest Rpt.).

INSECTS

MOSQUITOES - NEW HAMPSHIRE - Larvae of Culex salinarius very abundant in brackish water marshes at Seabrook, Rockingham County, on September 29. Average of 50-60 larvae (second to fourth instar) per dip collected in some pools. No reports of unusual biting activity. Scattered very large fourth instar larvae of Aedes cantator also present in brackish pools. Aedes sollicitans larvae were uncommon at usual collection sites, averaged 1-2 early second-instar larvae per dip. Anopheles punctipennis adults still biting at dusk on warm evenings at Durham, Strafford County. (Burger). MARYLAND - Heavy populations of Culiseta melanura reported in swamp areas around Pocomoke River in Somerset and Worcester Counties. Suspected major vector of eastern equine encephalomyelitis virus. Common in Prince Georges County after recent heavy rains.

A BLACK FLY (Simulium decorum) - NEW HAMPSHIRE - Adults still emerging from favorable breeding sites in Dixville Township, Coos County. Eggs still hatching on October 2-3 with water temperatures of 52.7 degrees F. (LaScala).

STORED PRODUCTS

INSECTS

CADELLE (Tenebroides mauritanicus) - OKLAHOMA - Heavy in stored seed wheat in Tulsa County. Livestock feed made of ground corn and grain sorghum in Payne County infested with this species and several other storage pests. (OK Coop. Sur.).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

A LADY BEETLE (Coleomegilla maculata) - INDIANA - Twenty-four sticky traps at elevations of 10-25 feet in Tippecanoe County corn field collected 41 adults October 2-4, indicating a migratory flight. (VanWoerkom). Traps took only 76 adults July 10 to September 10; averaged slightly more than one per day. Similar flight occurred September 27 and October 1, 1975. (Meyer).

FEDERAL AND STATE PROGRAMS

INSECTS

CEREAL LEAF BEETLE (Oulema melanopus) - CONNECTICUT - Two adults collected on oats at East Canaan, Litchfield County, by C. Jackson, June 18, 1976. Determined by R.E. White. This is a new State record. (PPQ).

GRASSHOPPERS - UTAH - Surveys showed 5,700 acres of cropland and 46,040 acres of rangeland likely to need treatment in 1977. Includes 17,840 acres of private and State range, 23,400 acres of Forest Service, 4,000 acres of Bureau of Land Management, 500 acres Indian Service, and 300 acres in national parks. (Crowe).

GYPSY MOTH (Lymantria dispar) - CALIFORNIA - About 250 egg masses found on 5 residential properties on fences and at bases of some Monterey pine and cherry trees at San Jose, Santa Clara County, by V. Hikida and D. Marcuson, October 7-8, 1976, in same area where 3 male moths trapped this year and one last year. Several egg masses had fully developed embryos, others 95 percent hatched. Collection and destruction of egg masses underway. Larval cast skins, but no live larvae, some pupae found. Damaged apricot and plum. Determined by R. Somerby. This is a new State record for an active infestation. (CA Pest Rpt.).

MORMON CRICKET (Anabrus simplex) - UTAH - Infestations threaten 600 acres of cropland and 5,100 acres of range for 1977. Includes 3,100 acres of Forest Service and 2,000 acres of private and State rangelands. (Crowe).

SCREWWORM (Cochliomyia hominivorax) - Total of 1,573 cases reported from continental U.S. September 19-25 as follows: Oklahoma 15, Texas 1,538, New Mexico 10, Arizona 10. Total of 491 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 636 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 196,962,000 as follows: Oklahoma 1,530,000, Texas 162,022,200, New Mexico 8,172,000, Arizona 25,237,800. Total of 10,788,000 sterile flies released within Barrier of Mexico. (Vet. Serv.).

WEEDS

SCOTCH COTTONTHISTLE (Onopordum acanthium) - CALIFORNIA - Infestations inspected in southeast Lassen County. All except one infestation along Long Valley Creek nearly eradicated. (CA Pest Rpt.).

RUSH SKELETONWEED (Chondrilla juncea) - CALIFORNIA - Biological control continues with release of Cystiphora schmidtii (a gall midge) in Loomis Basin, Placer County. Last week over 60,000 midges released on 15 new properties. Expect to release 150,000-200,000 per week. Release in El Dorado County will begin in October. (CA Pest Rpt.).

DETECTION

NEW STATE RECORDS

INSECTS

CEREAL LEAF BEETLE (Oulema melanopus) - CONNECTICUT - Litchfield County. (p. 720).

GYPSY MOTH (Lymantria dispar) - CALIFORNIA - Santa Clara County. (p. 720).

NEW COUNTY RECORDS

INSECTS

A CUCUJID BEETLE (Silvanus bidentatus) - WEST VIRGINIA - Raleigh (p. 718).

MIMOSA WEBWORM (Homadaula anisocentra) - PENNSYLVANIA - Beaver (p. 718).

A SCOLYTID BEETLE (Xyleborus affinis) - WEST VIRGINIA - Raleigh (p. 718).

CORRECTIONS

CPPR 1(39):647 - General Vegetables - "... BEAN FLY (Ophiomyia phaseoli) ..." should read "... BEAN FLY (Ophiomyia phaseoli) ..."

CPPR 1(39):645 - First paragraph - "... Philibostroma quadrimalatum ..." should read "... Philibostroma quadrimalatum ..."

CPPR 1(39):643 - STORED PRODUCTS - "COWPEA WEEVIL (Callosobruchus maculatus) ..." should read "COWPEA WEEVIL (Callosobruchus maculatus) ..."

LIGHT TRAP COLLECTIONS

CALIFORNIA - Bellota, 9/28, BL - ARMYWORM (Pseudaletia unipuncta) 6, BEET ARMYWORM (Spodoptera exigua) 365, BLACK CUTWORM (Agrotis ipsilon) 16, CABBAGE LOOPER (Trichoplusia ni) 4, CORN EARWORM (Heliothis zea) 4, VARIEGATED CUTWORM (Peridroma saucia) 1. Clements, 9/27, BL - Armyworm 7, beet armyworm 176, cabbage looper 2, corn earworm 1, GRANULATE CUTWORM (Feltia subterranea) 24. KANSAS - Hiawatha, 10/3, BL - Armyworm 2, corn earworm 48, EUROPEAN CORN BORER (Ostrinia nubilalis) 6, FALL ARMYWORM (Spodoptera frugiperda) 48, WHEAT HEAD ARMYWORM (Faronta diffusa) 1. Scandia, 9/29, BL - ARMY CUTWORM (Euxoa auxiliaris) 1, black cutworm 1, corn earworm 2, fall armyworm 2, variegated cutworm 1.

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

	Life Stage	Host	Port of Entry	Probable Origin	Destination
<u>Coleroa senniana</u> (Sacc.) Arx a leaf spot	ascomycete	on cut flowers from baggage	Kennedy Airport, NY	South Africa	NY
<u>Puccinia psidii</u> Wint. a rust	uredial	on leaves of allspice (<u>Pimenta</u>)	Detroit	Jamaica	MI
<u>Sphaceloma psidii</u> Bitanc. & Jenk. guava scab	imperfect	on guavas from passenger baggage	Nogales	Mexico	CA
<u>Calcaritermes</u> sp. a termite	adult	in Sapodilla and rosewood lumber	New Orleans	Belize	TX
<u>Chilo</u> sp. a pyralid moth	larval	in <u>Dieffenbachia canes</u>	New Orleans	Costa Rica	LA
<u>Shirahoshizo</u> sp. a curculionid beetle	adult	in coniferous logs	Hawaii	Japan	HI
<u>Spodoptera</u> sp. a noctuid moth	larval	on ginger root	Hawaii	Fiji	HI

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1975
(Continued from page 712)

COTTON

Highlights

BOLL WEEVIL infestations were isolated and heavy in Oklahoma. Populations in Arkansas were heavier than in several years. Collections from hibernation sites in Mississippi were the heaviest since 1969. Heavier populations than for the past 3 years occurred in Alabama. Considerable economic damage was done to cotton in South Carolina. Trap catches in Tennessee increased up to 10 times over the average for previous years. Controls in North Carolina were adequate despite a 50-percent decrease in cotton acreage. BOLLWORMS (*Heliothis* spp.) populations were 70-100 percent TOBACCO BUDWORM in Oklahoma. Bollworms were heavier and more widespread than any past year in Arkansas. One of the heaviest first generations occurred in Mississippi. Populations were heavy and caused considerable damage in South Carolina. Infestations were generally spotty in Tennessee. The economic level was reached early; controls were required a month earlier than most years in North Carolina. FALL ARMYWORM was economic for the first time in Alabama. BEET ARMYWORM infestations were heavier than ever before in South Carolina. TARNISHED PLANT BUG and CLOUDED PLANT BUG were heavier than ever in Arkansas.

BOLL WEEVIL (*Anthonomus grandis*) adults in OKLAHOMA were active by June 1 but no punctured squares occurred until the end of June. Infestations were light to moderate in all areas through early August, but isolated heavy infestations were present as early as mid-July. These infestations increased rapidly during August and 80-100 percent punctured squares were common in the west-central counties into mid-October; 50-80 percent was noted in some fields in the southwest counties. Infestations in ARKANSAS were heavier and more widespread than in several years. Pheromone trapping was continued with approximately 100 traps being operated in 10 counties. The peak catch occurred the week of May 26-30, averaging 11.4 weevils per trap. Populations continued to be heavier in the northern area of the State. This is the opposite of what it was for many years.

An average of 505 live boll weevils per acre was collected in MISSISSIPPI from hibernation sites in Washington County in February 1975. This is the most collected since 1969, and is greater than the average for the previous 9-year period. Adult weevils began feeding in cotton terminals in Quitman, Yalobusha, Monroe, Montgomery, and Carroll Counties by the first week in June. Cotton was squaring by mid-June and the first punctured squares were found on "hill" cotton. During the week ending July 3, punctured squares ranged 10-30 percent in Yalobusha, Lowndes, Rankin, Carroll, and Noxubee Counties. The first generation began emerging the week ending July 25. During peak activity in August, punctured squares ranged 5-75 percent, depending on the type of controls used.

Boll weevil adults in ALABAMA were noted throughout 1975 and taken during January, February, and March in heavier populations than in the previous 3 years. The first weevils of the season were collected on cotton the first week of May in Monroe County. The first collection in the northern area was in Limestone County during the second week of May along 9 field borders of 2 to 5-leaf stage cotton. The first "hatchout" in June in the southern area and in early July in the northern area, was heavy and successful. Succeeding generations were heavy and hard to control due largely to unfavorable weather for routine treatments. This was the major cotton insect of the season.

Boll weevil caused considerable economic damage to cotton in SOUTH CAROLINA in 1975. Major problems developed in early July. Rains hindered control in the last half of July and early August and continued at high levels throughout August. Adequate control was extremely difficult. Overwintered weevils were taken in grandlure traps in 3 counties during the third week of April, unusually early for TENNESSEE. Catch counts were 10 times the average of previous years and peaked in the growing area by mid-June. Early season controls were applied in the southern tier of counties in western areas. Egg laying punctures were noted the first week of July, and by mid-July, counts ranged from 5 to 25 percent punctured squares in infested fields. Populations were at or above control levels until mid-September. During the last week of August, punctured squares ranged 2-50 percent in Lake County, the northernmost cotton producing county. Diapausing weevil emergence in NORTH CAROLINA was complete by early July. Combination treatments for bollworms and weevils began in most fields by mid-July. Infestations in 1975 were greatly reduced from 1974 and control was adequate when applied properly. This was unexpected as the cotton acreage decreased 50 percent statewide.

TOBACCO BUDWORM (Heliothis virescens) was active in OKLAHOMA by early June in the southwest area but larvae were not found on cotton until mid-August. By late August Heliothis spp. (bollworms) populations in treated fields in the west-central counties were 70-100 percent H. virescens. These species were on early planted cotton in Jackson County, OKLAHOMA, in mid-June. Damaged squares were up to 15 or 20 percent in most areas in July and again in September and were heavier in August with up to 90 percent in the southwest counties and up to 50 percent in the west-central counties. Heliothis spp. occurred earlier and were heavier and more widespread on cotton than ever before in ARKANSAS. Infestations were economic farther north than they were in any past year. H. virescens was 43 percent of the Heliothis population. In central and south areas H. virescens comprised 90-100 percent of the Heliothis population in late August and September.

Heliothis spp. first-generation eggs were found on cotton in Quitman and Noxubee Counties, MISSISSIPPI, the week ending June 13; averaged 14-20 percent. Although beneficials were heavy and controlled first-generation larvae, this was one of the heaviest first generation infestations in recent years. Many fields in Yalobusha, Lowndes, Rankin, Madison, Carroll, and Noxubee Counties had 10-15 percent of the terminals infested and damaged. By mid-August, a definite problem existed in controlling bollworms. An estimated 21,000 acres were abandoned statewide due to poor control efforts.

Heliothis zea and H. virescens caused considerable economic damage to cotton in SOUTH CAROLINA in 1975. Major problems developed in early July. Rains hindered control in the last half of July and early August. Populations continued at high levels throughout August. Adequate control was extremely difficult. Populations were at or above the control levels in most infested TENNESSEE fields by mid-July. Populations continued generally spotty, but were heavy in infested fields during the rest of the season.

H. zea in NORTH CAROLINA reached the economic injury level extremely early in both the Scotland and Northampton County areas in 1975. Scattered fields required controls in late June, a month earlier than most years. Egg laying peaked July 21-26 with eggs on 50 percent of the terminals in some Scotland and Robeson County fields. Light trap collections and egg laying indicated an increased activity from July 28 to August 1 in Halifax and Northampton Counties. Counts averaging 50+ eggs per 100 terminals were observed in scattered Northampton County fields. Generally, boll damage averaged 10 percent, some fields with poor controls reached 60 percent damaged bolls. A shift toward H. virescens (tobacco budworm) was noted in some fields where controls were difficult and many fields had a heavier population in 1975 than in 1974.

FALL ARMYWORM (Spodoptera frugiperda) larvae became an economic pest to cotton in 10 central ALABAMA counties for the first time. Damage occurred to bolls, squares, blooms, and leaves in combination with Heliothis spp. (bollworms) and Anthonomus grandis (boll weevil); control was difficult.

BEET ARMYWORM (Spodoptera exigua) larvae damaged cotton in the middle and lower parts of SOUTH CAROLINA. Infestations were much heavier and more widespread than in any previous year.

TARNISHED PLANT BUG (Lygus lineolaris) and CLOUDED PLANT BUG (Neurocolpus nubilis) were heavier on cotton than they have been in several years in ARKANSAS. Infestations occurred farther south in the east-central area than in the past, seldom being found as early as late June.

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) caused little damage to tobacco in beds, and was light on newly set tobacco in all areas of KENTUCKY. Damage to newly transplanted tobacco was much lighter this year than during 1973 and 1974. Populations continued to increase during the growing season. However, by mid to late June, numbers were lighter than for any comparable period in the growing season for 1971-1974. Peak counts of 4.3 to 4.5 occurred in early August.

VEGETABLE WEEVIL (Listroderes costirostris obliquus) was again the number one wrapper tobacco plant bed pest in FLORIDA. Infestations and damage occurred in every bed inspected. Control was effected before transplanting.

GRANULATE CUTWORM (*Feltia subterranea*) was the third most important pest in tobacco fields, causing a 15 percent loss on 50 acres in the Quincy and Live Oak areas of FLORIDA.

GREEN PEACH APHID (*Myzus persicae*) populations in FLORIDA were the heaviest in 1975 since 1970 and occurred in most fields about the middle of May. Control measures were again good, but many fields showed evidence of potato virus Y transmitted by the green peach aphid. Insecticidal control will not prevent transmission because knockdown is not rapid enough. Alate forms in KENTUCKY were first observed on tobacco in mid-July but populations remained light until early August when light populations existed in most fields. Numbers continued to increase into late August in the central areas, especially on susceptible varieties, after which populations decreased rapidly. During mid-August approximately 15 percent of the acreage in the central areas required controls.

Green peach aphid levels in MARYLAND were slightly lighter on tobacco in 1975. About half of the 27,000 acres in the southern area required controls, with 50 percent of this acreage receiving treatment for aphid and flea beetle control. Yield reduction in untreated acreage with heavy infestations (700 acres) ranged 3-7 percent. Light to moderate populations were found in another 40 percent of the 27,000 acres. Significant increases were evident by mid-July and damage peaked from late July to mid-August.

SUGAR BEETS

SUGARBEET ROOT MAGGOT (*Tetanops myopaeformis*) adult fly activity in south-central IDAHO was delayed by cool, wet spring weather. Less than half the numbers of flies were caught on sticky-stake traps in 1975 as compared to 1974. Of 21 fields surveyed across the Snake River Plains, adults were economic in only 6 fields. Damage to sugar beets was very light. Adult activity in NORTH DAKOTA was first recorded in traps in Walsh and Pembina Counties on June 2. Adult activity was noted in Cass County the week of May 28 to June 2 and a trace of adult population appeared in McKenzie County by June 6. Peak adult emergence occurred in Walsh and Pembina Counties on June 16.

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (*Homoeosoma electellum*) infestations in SOUTH DAKOTA were found in approximately 50 percent of all harvested sunflower fields and yield reductions were severe. During the first week of August larvae (0.50-0.75 inch) in NORTH DAKOTA ranged up to 50 per head and caused extensive damage to sunflowers in Dickey, Eddy, Foster, Griggs, La Moure, Sargent, and Steele Counties. Damage was also evident in Barnes, Nelson, eastern Ramsey, Ransom, Richland, Stutsman, and western Walsh Counties. Early planted sunflowers (planted before May 20) were more heavily damaged. By August 22, larval infestations ranged from a trace up to 100 percent of the plants infested in fields in Cass, Grand Forks, Griggs, Steele, Traill, and Walsh Counties. By September 12, larvae were causing light damage to sunflowers in Grant County. By October 15, a partial second-generation larval

infestation was found in Richland County fields. Controls were applied for sunflower moth in up to 45 percent of the fields in the infested counties.

SUNFLOWER BEETLE (Zygogramma exclamationis) adults were active in NORTH DAKOTA sunflowers by June 6, 1975. By June 20, leaf feeding had occurred in Dicky, Eddy, Foster, and Griggs Counties. Larvae were evident in most fields in Barnes, La Moure, Steele, and Sargent Counties and ranged up to 7 per infested plant. By July 18, larvae were present in most fields surveyed in Eddy, Foster, and Griggs Counties and ranged up to 8 per infested plant. During the first week in August, larvae caused light damage to Walsh County sunflowers.

A WEEVIL (Cylindrocopturus adspersus) damage reached economic importance in SOUTH DAKOTA in several fields of sunflowers with up to 25 percent damage.

REDBACKED CUTWORM (Euxoa ochrogaster) damage to peppermint fields in central OREGON was less severe in 1975 than 1974. A few new plantings were heavily damaged in Jefferson County, where third and fourth-instar larvae ranged up to 4.1 and 6.3 per square foot. The adult flight extended July 3 to September 15. The peak was in late July to mid-August. Control failures were due to improper application on 200 acres treated this spring.

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) was heavy on OKLAHOMA sunflowers. Up to 25 larvae per head was noted in untreated fields and poorly timed treated fields in Harmon, Jackson, and Tillman Counties from late June to early August.

TWOSPOTTED SPIDER MITE (Tetranychus urticae) remained noneconomic in Willamette Valley peppermint plantings, but, as usual, required control in southwest and central OREGON.

POTATOES, TOMATOES, PEPPERS

Highlights

VARIEGATED CUTWORM controls was required in several hundred acres of potatoes in Utah. Variable potato damage occurred in Wisconsin. An outbreak occurred on potatoes in Michigan and Ohio. BLACK CUTWORM populations were heavier in Maine. EUROPEAN CORN BORER was heavy on peppers in Kansas. Treatments controlled infestations on peppers in Maryland and Delaware. FALL ARMYWORM was serious on peppers in Delaware. COLORADO POTATO BEETLE was above normal on potatoes and tomatoes in Utah and heavily damaged home garden potatoes in Oklahoma. Development was the latest ever in VIRGINIA since 1947. GREEN PEACH APHID was 100+ per sweep on potatoes in Nevada, light in Idaho, and substantially heavier in Washington trap pan records. Populations were light statewide in Florida. Heavy counts were controlled effectively in Maryland. Overall counts in Maine were five times heavier than in 1974.

Control of VARIEGATED CUTWORM (*Peridroma saucia*) was required in several hundred acres of potatoes, in the Enterprise and Beryl areas of Washington and Iron Counties, UTAH. Severe damage to tomatoes in Cook and other neighboring counties of ILLINOIS was noted during July and August in the northeast district. In early July, variable-sized larvae and stalk feeding were observed in WISCONSIN potato fields in Langlade and Adams Counties. By mid-July, potato fields in Portage, Langlade, and Adams Counties had variable damage; up to 35 larvae per plant were noted in one Langlade County field. Larval populations varied through August and caused light to moderate damage to potato fields in many areas. By early August more pupae than larvae were being found in Langlade County potatoes with some natural controls suspected present. There was an outbreak on MICHIGAN potatoes. The first larvae were observed in early July with up to 30 larvae per hill. This problem is expected to linger into 1976.

A serious outbreak of variegated cutworm larvae occurred in commercial potatoes in OHIO during the first half of July. This appeared to be the most widespread of any known for this species. Larvae, third to sixth instar, were up to 38 per plant in the northeastern counties on July 8. Emergency treatments were applied in the northeastern and northwestern counties the following week. Treatment was required every 3 days on one reported outbreak in commercial celery in Huron County. Pupation began by July 15. Damage to home garden tomatoes continued through mid-August. Damaging numbers were reported during 1975 from most major potato growing areas of NEW YORK including Steuben, Wayne, and Genesee Counties.

BLACK CUTWORM (*Agrotis ipsilon*) was severe on 40 acres of potatoes in Orleans County, VERMONT. Damage occurred on every second or third plant in late August and was occasionally found on the tubers. This pest has been found occasionally in potato fields, but has not been of economic importance. This species damaged up to 20 percent of the tubers in several potato fields near Freyburg, Oxford County, MAINE, and also in several fields in the Presque Isle area. Generally it was a more likely problem in the southern and central areas where populations were much heavier than in 1974 damaged potatoes were in excess of one percent. A heavier than usual number of adults was caught in blacklight traps all season. The dry and hot weather influenced larvae toward more tuber feeding.

EUROPEAN CORN BORER (*Ostrinia nubilalis*) was heavy on bell peppers in a large commercial planting in Johnson County, KANSAS, during late August and early September. Timely controls on several hundred acres of peppers in MARYLAND reduced the potential losses of 80-100 percent to less than 3 percent in commercial acreage in Wicomico, Caroline, and Worcester Counties. Infestations on untreated sweet peppers averaged 40-90 percent in DELAWARE. Control in most commercial fields was effective where they were applied properly. When not controlled, borers were very heavy on Irish potato vines in southern areas.

WESTERN BEAN CUTWORM (Loxagrotis albicosta) populations in IDAHO were very light, with only very minor damage during 1975. Field counts in the Twin Falls area had only 0.19 percent damage. Adult blacklight trap catches in the Twin Falls area peaked at 45-72 per trap July 28-31. This same population in 1974 occurred 10-12 days later. Only one of 6 traps caught more than 700 moths in 1975.

SOUTHERN ARMYWORM (Spodoptera eridania) in FLORIDA was moderate in Dade County potatoes in late winter; no control measures were needed. The count was light (0-1 per 10 plants) during the spring with some damage to tomato fruits at Bradenton, Manatee County, and Immokalee, Collier County. Counts were heavy (0-15 per 10 plants) in the fall and damaged foliage and fruit.

As in 1973 FALL ARMYWORM (Spodoptera frugiperda) was a serious late-season pest in DELAWARE in sweet peppers. Eggs were first noted August 16. Subsequent larval infestations of fruit averaged 20-30 percent in untreated plants during September in areas of Sussex County.

CABBAGE LOOPER (Trichoplusia ni) was moderate in FLORIDA potato fields in late winter, no controls were needed. Counts were light (0-1 per 10 plants) on tomatoes during the fall at Bradenton.

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) damage was heavier than normal on UTAH potatoes and tomatoes in Box Elder, Weber, Davis, and Cache Counties. Populations appeared to migrate into potato fields later in IDAHO than in past years. This happened after the soil systemics used for other insects were no longer effective. Adults were active in most areas of OKLAHOMA by April 20 and egg laying was underway the first week of May. Counts were heavy on home garden potatoes in many areas into June. Fall potatoes were heavily damaged in Payne County in mid-September. In VIRGINIA on May 14, 1975, overwintered adults were heavy and laying eggs in Accomac and Northampton Counties. None of the egg masses in the Painter area had hatched as of May 14. By May 28, most egg masses in this area had hatched although many overwintered beetles were still laying eggs. Beetle development was the latest in 1975 of any observed since 1947.

Colorado potato beetle populations over the past several years were economic in all areas of MARYLAND where growers failed to maintain scheduled spray programs. Egg laying in DELAWARE was noted on tomatoes and potatoes starting in mid-May and populations persisted to late-June. The first adult emergence began in RHODE ISLAND May 15. First-generation egg hatch was June 4 and the second was July 3. Control was generally good in commercial fields. Populations were heavy in untreated backyard gardens.

GREEN PEACH APHID (Myzus persicae) averaged 100+ per sweep on 1,280 acres of potatoes in Eden Valley, Humboldt County, NEVADA, in late August; no controls were applied. Populations were extremely light in all areas of IDAHO. Controls were needed in only a few instances. Trap pan records for central WASHINGTON were substantially heavier than in 1974. Potato growing areas were ranked from heavy to light, as follows: Yakima, Toppenish, Pasco, Quincy, Royal Slope, Othello, Moses Lake, Wahluke Slope, and the Sand Dunes (between George and Moses Lake). Populations increased slowly in the Sand Dunes and the Wahluke Slope areas. Spread of potato leaf roll virus was about normal or a little less than in 1974, despite increased population, probably due to better control.

Populations of green peach aphid were observed on potatoes in WISCONSIN in early August, but significant populations, up to 50 aphids per leaflet, in most potato fields did not appear until August 15 in the central and southeast districts. Disease, heavy rains, and control measures significantly reduced the numbers of this species and POTATO APHID (Macrosiphum euphorbiae) by the end of August. Heavy populations were still reported in Washburn County in early September. Counts were fewer in Dade County, FLORIDA, than in previous years. The heaviest was 50-60 per lower leaf in untreated potato plots. Populations were controlled by large numbers of coccinellids, braconid parasitoids, and fungi, Entomophthora spp. There was no problem with control; populations were light statewide. Counts were moderate to heavy in all unsprayed potato and tomato fields on the Eastern Shore of MARYLAND; damage was less than one percent due to timely sprays or pretreatment with systemics. Mid-July infestations of green peach aphids on unsprayed peppers ranged moderate to heavy on 40-70 percent of the plants (100 acres in Caroline, Dorchester, and Wicomico Counties). Several hundred acres were "pest free" due to systemic and scheduled foliar treatments.

Green peach aphid populations on peppers in DELAWARE did not peak (2,600 per 100 leaves) until mid-August on untreated plants. Infestations on potatoes were first noted in mid-June and by late July, populations were elevated on tomatoes and potatoes in most areas. There were moderate counts on RHODE ISLAND commercial potatoes through the month of July in spite of control measures. Overall, infestations in MAINE were up to 5 times heavier than 1974. The same areas were heavily infested in 1975 as in 1974. The first 4 aphids were taken at Corinna, Penobscot County, during the week ending July 12, and 47 on July 26. Counts were twice those of 1974 and 7-10 days earlier in Aroostook County. Of 123 traps, 94 had 0-5 aphids per trap during the peak period of the hot spots.

A SPIDER MITE (Tetranychus evansi) damaged commercial eggplant in Lake County, FLORIDA, during June; controls were inadequate.

BEANS AND PEAS

Highlights

MEXICAN BEAN BEETLE required control in Utah. The eradication program continued in Idaho. Infestations were more severe in Indiana, heavy in Delaware, and economic in many parts of Virginia. PEA LEAF WEEVIL was lighter and the first record of ELM LEAF BEETLE damaging beans was noted in Idaho. SEEDCORN MAGGOT damage was 25-50 percent in Wisconsin lima beans.

MEXICAN BEAN BEETLE (*Epilachna varivestis*) was common on beans and peas, required control in central and northern UTAH fields and gardens. Some fields were treated to keep processing plants free of insect contamination. Eradication programs in IDAHO continued in the City of Boise, Ada County, and was initiated in Caldwell, Canyon County, where a small infestation of 17 gardens was found. In the City of Boise there were 1,300 infestations compared to 899 during 1974. This is a 6 percent decrease, considering there were twice as many gardens in 1975. The area of infestation moved only 0.75 mile west of the city compared to several miles each year in the past. No commercial fields have been infested to date. Infestations were more severe on INDIANA garden beans in 1975 than 1974; 45 acres of snap beans were unsalable due to feeding on pods in Jackson County. In general, infestations were very heavy on beans in DELAWARE. Most commercial lima bean fields treated with systemics had adequate control. In other fields, insecticidal applications were necessary during late August and early September.

A moderate infestation of first-instar larvae was observed in the Independent City of Virginia Beach, VIRGINIA, feeding on snapbeans as early as June 10, 1975. A light population of first-generation adults had completed development and was mating and laying eggs on soybeans in Isle of Wight County August 5. Populations remained light in the Middle Peninsula and the Northern Neck areas through August 15. A sample of 53 fields was taken August 29 in Westmoreland County and showed an average of 9.4 beetles per 30 row feet. Defoliation averaged 4.8 percent. In Charles City County, a 21-field project (744 acres) averaged 0.1 beetle per 30 row feet. The estimated average defoliation was 4.6 percent. A sample of 55 fields (1,154 acres) taken in Westmoreland County September 4 showed an average of 13.1 beetles per 30 row feet. Defoliation averaged 4.6 percent. Only one field in Westmoreland County needed treatment.

Economic infestations of Mexican bean beetle were noted in 2 of 8 fields in Isle of Wight County. By September 11, a sample of 55 fields from Westmoreland County averaged 21.9 beetles per 20 row feet. Defoliation averaged 6.7 percent, 65 acres (5.6 percent), needed treatment. In Charles City County, a 22-field project averaged 0.2 beetle per 30 row feet. The estimated average defoliation was 4.4 percent. A 36-field project in James City County, averaged 8.6 beetles per 30 row feet and 2.9 percent defoliation. On September 18, Northumberland and Lancaster Counties averaged 12.8 beetles per 30 row feet. The estimated

defoliation was 5.9 percent. In Charles City County, the average was 0.3 beetle per 30 row feet and the estimated defoliation was 4.4 percent. By September 25, Northumberland and Lancaster Counties averaged 13.5 Mexican bean beetles per 30 row feet. The estimated defoliation averaged 5.7 percent. Fields in Charles City County, averaged 1.6 beetles per 30 row feet and the average estimated defoliation was 4.8 percent. Fields in James City County averaged 13.5 beetles per 30 row feet with an estimated 4.3 percent defoliation. One 33-acre field (3.8 percent of the acreage sampled) in that county needed treatment. In Westmoreland County, beetles averaged 16.6 per row feet with an estimated 9.8 percent defoliation (53 fields, 1,154 acres). One 15-acre field (1.3 percent) needed treatment.

The first damage by PEA LEAF WEEVIL (Sitona lineatus) in IDAHO to green peas was observed in Nez Perce County, April 25. A general flight of adults migrating from alfalfa fields to pea fields occurred by May 8. The first spraying for adult control started in Nez Perce County. By May 14, much of the lower pea growing areas of northern Idaho required treatment. The populations were general in northern areas by May 23 with damage ranging from little to severe injury. Severely injured fields had 75-95 percent "clamshell" notching and terminal growing point injury. A number of Austrian winter pea fields was destroyed and others severely damaged by repeated feeding by adults. Nearly all damage to peas by overwintering adults was over by June 25. New adults emerged July 25 from peas and peak flights to overwintering sites in alfalfa occurred by August 8. Economic levels were reached in WASHINGTON on peas in a few areas of Whitman County and some sprays were applied. This was not the serious problem that it has been in recent years. Adults were on soybeans in Walla Walla County, no real damage, and on beans in Adams County. Extensive damage on strawberry foliage was noted in a Whitman County planting.

PEA WEEVIL (Bruchus pisorum) adults in OREGON were prevalent in Linn, Benton, and Marion County pea fields again in 1975. They were noticeably lighter in Marion County than during the past two years. Damage and average of 2.5 per 25 sweeps in IDAHO was heavier than in previous years and the 1974 average of one per 25 sweeps. Some fields ranged 15-18 per 25 sweeps. Damage was 10-20 percent on some Austrian winter peas; 90+ percent damage was noted in one 75-acre field.

ELM LEAF BEETLE (Pyrralta luteola) adults defoliated a large IDAHO garden planting of green beans after they had defoliated adjoining elm trees. This is the first record of this insect doing serious damage to beans.

First-generation EUROPEAN CORN BORER (Ostrinia nubilalis) larvae in WISCONSIN caused little damage in mid-July, and few controls were applied to beans. By mid-August adults in the central district had increased significantly with egg masses up to 4 per 5 feet of row in a bean field in Waushara County. Treatments were continued through August and into early September for control of the second larval generation. Few fields suffered significant damage. Infestations in DELAWARE were heavy on some early planted snap beans in the southern areas.

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) was locally heavy on commercial plantings of southern peas at Sanford, Seminole County, FLORIDA, during late May and early June.

SEEDCORN MAGGOT (Hylemya platura) seedling damage in excess of 25 percent was first observed in Lima beans in Jefferson County, WISCONSIN, in early June where adults were laying eggs. Plant growth was slowed by cool, wet conditions which allowed the larvae to feed longer prior to seedling emergence. By mid-June more damaged fields of beans appeared in the central and south-central districts. In these districts bean and seedling damage was 25 percent. Some lima bean fields in the south-central district had stand reduction by up to half in mid-June. A few snap bean fields had 90 percent of the seedlings injured in La Crosse County and up to 20 percent injury in Langlade County.

BEAN APHID (Aphis fabae) was much heavier in UTAH than normal. Some Box Elder County Lima bean fields required control.

TWOSPOTTED SPIDER MITE (Tetranychus urticae) was well above normal in numerous commercial and home bean fields in UTAH. Infestations were heavy during July and August in parts of Box Elder, Davis, Salt Lake, Tooele, Washington, and Weber Counties.

COLE CROPS

Highlights

The main CABBAGE LOOPER flight occurred the first 21 days in August. Infestations were heavy in Florida and Maryland. IMPORTED CABBAGEWORM heavily damaged cabbage in Maryland. Populations peaked in July in Maine. DIAMONDBACK MOTH populations were heavy in Florida and severely damaged poorly protected crops. CROSS-STRIPED CABBAGEWORM was damaging in Indiana. CABBAGE MAGGOT was heavier than any time in the last 15 years in western Washington.

Pheromone traps were operated in WISCONSIN from July through September to capture CABBAGE LOOPER (Trichoplusia ni) adults. The main adult flight in Outagamie, Racine, and Columbia Counties occurred the first 21 days in August, with a light flight in early to mid-September. Larvae increased about 7 days after the adults; controls were adequate. Mid-September cold weather reduced counts to nearly none. The first adult emergence occurred May 15 and egg laying on potatoes, tomatoes, and peppers continued through August 11. Populations generally were not as heavy as 1974.

T. ni was heavy on cabbage in the Bradenton area of FLORIDA during the spring and fall, ranged 2-20 per 10 heads. In untreated plants, up to 100 percent of the heads were unmarketable. This species was moderate on cabbage in Seminole County; it was one of the 2 main pests of cabbage in the Everglades area. It was noted on unsprayed or poorly treated cabbage and other cole crops at Hastings, St. Johns County, from February to May. In MARYLAND, 3-4 sprays were required on late season cole crops in Dorchester, Baltimore, Wicomico, and Caroline Counties. All commercial acreage required preventative spray programs.

All 800 acres of early spring cabbage in MARYLAND required 2-3 sprays to control IMPORTED CABBAGEWORM (Pieris rapae). Unsprayed garden cabbage plots were heavily damaged in all areas. Adult activity was observed in NEW YORK April 26 in various parts of Suffolk County. Egg laying on cabbage transplants was observed May 23 in Columbia County. The first adult was taken in MAINE at Orono, Penobscot County, on May 16. Peak numbers were noted about July 20 with statewide problems, in contrast to 1974 when almost none were seen until the middle of August.

DIAMONDBACK MOTH (Plutella xylostella) developed a heavy FLORIDA population and caused severe damage to untreated or poorly treated cole crops in the Hastings area from February to April. It was moderate in some cabbage fields in Marion County. The first activity of the season in NEW YORK was observed in cabbage fields in Ontario County June 30.

CROSS-STRIPED CABBAGEWORM (Evergestis rimosalis) larvae in INDIANA extensively damaged collards, broccoli, cauliflower, and cabbages in Tippecanoe County, and in Clay County gardens; it was seldom seen in past years.

BLACK CUTWORM (Agrotis ipsilon) did some damage at times to cabbage in the Belle Glade area of FLORIDA. In the Hastings area, it was a major pest of cole crops in scattered acreage.

FALL ARMYWORM (Spodoptera frugiperda) was heavy in FLORIDA and caused severe damage to untreated or poorly treated cole crop buds during October and November in the Hastings area.

YELLOWMARGINED LEAF BEETLE (Microtheca ochroloma) was light to heavy in FLORIDA on plantings of mustard greens in Hillsborough County during January and February and was moderate on some plantings of turnip and radish during late March and early April. Populations were heavy and peaked during late March and early April on turnips at Gainesville, Alachua County and was fairly common on watercress in a low area at Gainesville during mid-April. These are the first records of this beetle from Alachua County.

Because of heavy overwintering pupae, CABBAGE MAGGOT (Hylemya brassicae) was heavier than at any time in western WASHINGTON since control resistance developed about twenty-five years ago. Untreated plants were practically destroyed. Adequate moisture conditions in August and unseasonably warm weather in September favored activity of the second and third generations, and commercial cabbage seed fields were heavily damaged, plant losses ranged up to 10-40 percent even where recommended control procedures were followed. The spring adult emergence in WISCONSIN began in late May in Columbia County and 7 days later in Outagamie and Racine Counties. Above normal temperatures favored adult emergence, and by May 30 emergence was 50 percent in the south-central district, about 50 percent in Outagamie County and one third complete in Racine County. By early June, the spring emergence was complete in most areas and spring adults were heavy in Outagamie County traps; regular treatments were recommended. The major cabbage growing areas had minor damage from the spring generation except in Outagamie County. Some fields of repeated

cabbage had 50 percent injury. In Outagamie and Kenosha Counties cauliflower and broccoli had greater losses than cabbage. Second-generation larvae in late July and early August were less damaging. First adults were trapped in NEW YORK May 12 in Ontario and Yates Counties. First eggs were observed May 8 in Erie County and by May 15, egg counts ranged from 5 to 25 per plant. Second-generation flies were reported June 19 in Madison County. Severe infestations of this species and ONION MAGGOT (Hylema antiqua) occurred throughout the cole crop growing areas in NEW HAMPSHIRE where controls were not applied, particularly in the southern half of the State. Infestations were severe in MAINE on all cole and radish plants. Control failure was due to resistance and poor timing.

SOUTHERN GREEN STINK BUG (Nezara viridula) was moderate (2-20 per 10 heads) in FLORIDA on cabbage at Bradenton during the fall; infestations were heavy on cabbage adjacent to a swamp area.

CABBAGE APHID (Brevicoryne brassicae) was heavy on cole crops at Hastings, FLORIDA, during February and March, if plants were untreated or poorly treated.

CUCURBITS

STRIPED CUCUMBER BEETLE (Acalymma vittatum) populations were economic in almost all cucumber and melon fields (2,300 acres) on the Eastern Shore of MARYLAND. Damage was slightly above 1974 levels due to the wet fields in mid-May which interfered with required sprays. Counts of 3-6 beetles per seedling were common in unsprayed portions of a field. In May and early June, 2-3 sprays were needed to maintain light adult populations. In NEW HAMPSHIRE there was moderate to heavy adult damage to cucumbers and squash in New Hampshire. Feeding injury in several fields of cucumbers was severe in DELAWARE during late May and early June.

SQUASH BUG (Anasa tristis) was active in OKLAHOMA from mid-June to mid-September and heavily damaged home garden squash in many areas. Cucumbers, watermelons, and pumpkins were damaged also.

MELON APHID (Aphis gossypii) was moderate to heavy, mostly on watermelons in some areas of OKLAHOMA from mid-July to early August.

GENERAL VEGETABLES

ASPARAGUS BEETLE (Crioceris asparagi) was collected in garden asparagus in the Tulsa area, Tulsa County, OKLAHOMA, in late April for a new State record. This species was heavy in DELAWARE from May 10 on asparagus in many areas and during August populations injured ferns in several fields.

STRIPED CUCUMBER BEETLE (Acalymma vittatum) was extremely severe in many MAINE gardens in 1975. Up to 3 planting attempts were necessary when controls were not applied or applied properly.

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) in FLORIDA was still a serious pest of the Cuban farmers sweetpotatoes (boniatos) in Dade County, with up to 50 percent loss.

VARIEGATED CUTWORM (Peridroma saucia) was a serious pest on home gardens over most of the Eastern half of KANSAS, particularly from mid-May to mid-June.

A LEAFMINER FLY (Liriomyza sativae), previously reported as L. trifolii, continued very destructive to celery in the Bell Glade area of FLORIDA, particularly during the spring. All acreage suffered at least some damage. Accumulated mines reached 1,500 to 1,800 per stalk in some instances (economic at 400 per stalk) and was economic on celery in the Zellwood area, Orange County, considerably below that at Belle Glade.

ONION MAGGOT (Hylemya antiqua) continued to be serious on onions, especially in the Grant area of MICHIGAN in 1975. The first adult catch in NEW YORK of the season was during May 3-8 in Orange County and mid-May in Madison, Oswego, and Yates Counties. Damage was reported heavier than usual in several fields in Oswego County about June 26.

DECIDUOUS FRUITS AND NUTS

Highlights:

CODLING MOTH was kept in check by cool weather in the Hood River Valley area of Oregon but was more severe in Jackson County. Two broods occurred in Washington. Damage in Utah was lighter than in 1974 and heavier than in 1974 in Ohio. The presence of ORIENTAL FRUIT MOTH was confirmed in Washington County, Utah. REDBANDED LEAFROLLER damage was economic in Maryland and minimal in North Carolina. Trap catches were light in New York. Unusual EUROPEAN CORN BORER injury to apples was noted in Maryland. PLUM CURCULIO activity was heavy in Ohio and well controlled in Maryland. TILEHORNED PRIONUS was the heaviest since 1972 in Rhode Island. Very high numbers of APPLE MAGGOT were trapped in Minnesota, with heavy damage to most homeowner trees. WHITE APPLE LEAFHOPPER injury levels decreased from the record high levels of 1974. PEAR PSYLLA overwintering populations were very heavy in Oregon but overwintered parasites kept numbers in check despite weather interference with controls. Insecticide resistance is responsible for this species as a major pest on pears in Michigan. SAN JOSE SCALE continued to spread in Maryland. WHITE PEACH SCALE is still a serious problem on Madison County, Florida, peaches. EUROPEAN RED MITE was more of a problem in Michigan and the major apple pest in Maine. FALL WEBWORM damage has increased in North Carolina the past 3 years. PECAN NUT CASEBEARER continued its heavy damage in New Mexico. PECAN WEEVIL was heavy in many areas of Oklahoma.

CODLING MOTH (Laspeyresia pomonella) emerged in the Hood River Valley in OREGON May 5-7. Cool summer weather reduced adult activity and growers had an easy year in keeping populations under control. Untreated apples in one orchard, normally with 70 percent damage, had only 32 percent stings and larvae. Red and

Golden Delicious apples sustained only 16 percent damage with one cover spray. Damage to unsprayed apples and pears was much more severe in Jackson County than in previous years with 90 percent infestations common. The first adults were taken April 30. Entries were also present in pears in commercial orchards under overhead sprinklers by mid-July.

Codling moth had two complete broods in WASHINGTON in 1975 in the Yakima Valley, as indicated by pheromone traps. The first lasted through June; the second began July 25. In Grant and Adams Counties, the first flight occurred in mid-May with heavy catches ending May 30. Above average counts continued until June 27. Infestations increased to high levels 14 days later but leveled off again. Second-generation larvae were first found the week of July 24. Adults decreased the week of August 17 and were practically finished September 22. This species was not as heavy as in 1974 in Spokane County due to cold, wet weather, with two flight peaks delayed 14 days. The first occurred on June 10 and the second on August 8. The north-central area had two broods also, although delay within the second brood period resembled a third brood. The first peak occurred a few days prior to May 31 and the second about July 27.

Codling moth adults in UTAH emerged late in the season and the population was lighter than normal due to the wet, late spring. Commercial control was effective and more home orchards were able to raise sound fruit than usual. First generation adult activity in OHIO, measured by pheromone traps, began May 13 and peaked about May 31. Larval feeding damage in unsprayed fruit was first noted June 12 and increased to a maximum of 37 percent in Wayne County on August 14. Rapid increases in the second-generation adult population were noticed during the first half of August and peaked August 16. The flight period ended by September 1, when most larvae were in the third and fourth instars. Damage was generally greater in 1975 than for the past 2 years.

Codling moth first emergence in MICHIGAN was noted by pheromone trap catches on May 18 in the fruit ridge area north of Grand Rapids. Egg hatch was noted on May 29 in the same area. The emergence of the second generation was unusually spread out, probably the result of cool temperatures in the latter part of the summer. Spray schedules kept populations in MARYLAND well below economic thresholds in 1975. The first NEW YORK pheromone trap catch was taken the week of May 16 in Ontario, Wayne, and Ulster Counties.

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) was taken in UTAH pheromone traps at Pleasant Grove, Utah County, during early June. Adult occurrence was verified in Washington County orchards as has been long suspected. The first NEW YORK pheromone trap catch was taken May 12 in a peach block in Ulster County, May 14 in Ontario County in an apple block, and May 12 in Wayne County. Larvae were observed June 4 in shoot tips of apples. The second flight of the season started in Ulster County before July 7.

REDBANDED LEAFROLLER (*Argyrotaenia velutinana*) emergence peaked in NORTH CAROLINA June 18 in Wilkes County and June 4 in Lincoln and Cleveland Counties, very close to 1974 dates. Damage was minimal due to a close adherence to spray schedules. Damage in MARYLAND was economic in late September in Washington County orchards. Damaged apples ranged 1-2 percent in 400 acres of late varieties. The first catch in NEW YORK of adult males in pheromone traps was reported April 14 at Ulster County, April 17 at Columbia County, April 24 at Tompkins County and during the week of April 20-26 in the western area. The first larval activity was observed in Ulster County April 30. Seasonal trap catches were light compared to problem years and no cases of extensive field injury to fruit were reported. Populations were down slightly in MAINE.

PEACH TWIG BORER (*Anarsia lineatella*) damage to deciduous fruits was above normal in many UTAH localities including Salt Lake, Kane and Davis Counties and at Orem, Salem, Santaquin, and Mapleton in Utah County. Infestations were moderate to severe in Weber and Box Elder Counties. The first NEW YORK catch of the season in pheromone traps occurred in Ulster County on June 26.

EASTERN TENT CATERPILLAR (*Malacosoma americanum*) hatched in Pittsburg County, OKLAHOMA, by late March. Moderate to heavy infestations on wild plum and various fruit trees were reported in a number of counties in most areas of the State during April and early May.

Unusual EUROPEAN CORN BORER (*Ostrinia nubilalis*) injury to apples occurred in MARYLAND. Larvae infested 10-15 percent of the apples in 20 acres near Salisbury, Wicomico County, in September. The entire crop was lost due to larval contamination.

The first OBLIQUEBANDED LEAFROLLER (*Choristoneura rosaceana*) adults in NEW YORK were taken in pheromone baited traps June 11 in Ontario County and June 15 in Wayne County. Significant infestations were found in an increasing number of apple orchards, particularly in the Lake Ontario fruit belt.

A TORTRICID MOTH (*Platynota flavedana*) caused several cases of fruit damage found in Ulster and Orange Counties, NEW YORK. A 20 percent pupation of first brood larvae was noted August 7, the second brood flight started in Ulster County August 14, and egg masses in the blackhead stage were found September 9 in Orange County.

GREEN FRUITWORM (*Lithophane antennata*) damage to apples at Monmouth, Kennebec County, MAINE was less than 50 percent of the damage in 1974. The loss was estimated at \$85,000.

PLUM CURCULIO (*Conotrachelus nenuphar*) overwintered adult activity in OHIO was first noted May 8 and fruit drop occurred by June 20. Feeding and egg-laying damage to unsprayed fruits was heavy through June and the first half of July. Plums had 41 percent damage by June 20, and 62 percent by July 17, peaches had 14 percent damage by June 24, and apples had 10 percent by June 17. New adults began emerging by July 17. Spray schedules kept populations in MARYLAND well below economic thresholds in 1975. The first NEW YORK emergence was reported in Ontario County

May 17. Plum curculio adults were sighted on plums May 19 in Ulster County, and feeding activity was found on sweet cherries and apples in Wayne County during the week of May 23. Populations and damage in MAINE was down slightly from 1974, but still heavy.

TILEHORNED PRIONUS (*Prionus imbricornis*) was easily found in and around the roots of unmaintained apple trees in RHODE ISLAND; 1975 was the heaviest year since 1972.

APPLE MAGGOT (*Rhagoletis pomonella*) emerged in MINNESOTA on schedule this year around July 3. Very heavy numbers appeared in traps throughout the season. Damage to homeowner trees was irregular. Most sustained considerable damage, but some escaped entirely. The first MICHIGAN apple maggots caught in attractant traps were noted on June 24 at Fennville, June 27 at Marne, and July 2 at Hart. Emergence continued until late September this year creating a potential problem for the infestation of late-maturing varieties. Little injury resulting from the activities of this pest was noted in the orchard damage survey conducted by the Tree Fruit Pest Management Project this season. The first NEW YORK adults of 1975 were observed in emergence cages June 18 in Ulster County. The first catch on sticky board traps was taken July 3 in Ulster County and June 30 in Wayne County which was 14 days earlier than observed in 1974. Peak emergence was reported for Wayne County on July 20. The first adult emergence in RHODE ISLAND was July 14. The larvae were easily found in unsprayed northern orchards throughout the season. Dry weather in NEW HAMPSHIRE prevented normal emergence of adults, resulting in very light populations in 1975 in apple growing areas. The first adult was trapped in MAINE on a false-apple lure July 3. Populations peaked lower than usual on July 24, the same time as 1974. Injury and loss was one percent, about equal to 1974.

WESTERN CHERRY FRUIT FLY (*Rhagoletis indifferens*) emergence was delayed by cold weather in WASHINGTON. Wind in the early spring contributed to poor timing and control, and more larvae were found in cherry orchards in 1975 than in any recent year.

TARNISHED PLANT BUG (*Lygus lineolaris*) damaged an average of 5-10 percent of harvested apples in NEW HAMPSHIRE, particularly in Hillsborough and Rockingham Counties, and reduced fruit 1-2 quality grades.

The WHITE APPLE LEAFHOPPER (*Typhlocyba pomaria*) hatch in NEW YORK was observed in Monroe and Orleans Counties May 20. Populations and injury levels in MARYLAND decreased over record high levels of 1974. Damage was spotty. About 75 acres required controls in Washington County between mid-July and late August when counts averaged one per leaf in several apple orchards.

PEAR PSYLLA (*Psylla pyricola*) overwintering populations were very heavy in OREGON in 1974. November counts ranged 23-37 per trap in Hood River, Hood River County, pear orchards. After a mild winter, pretreatment counts varied from 8.5-27 per tray in early March. Bad weather impeded delayed dormant applications. Mid-March posttreatment counts averaged 0.5 psylla per tray. High July temperatures and good overwintering of parasites and predators were perhaps responsible for keeping psylla numbers in

check despite early season weather interference with controls. Fall buildups of pear psylla occurred in some late pear orchards but numbers were lighter than in 1974. Counts up to 13 per tray were noted in November. Overwintering WASHINGTON populations were heavy during late February and March, averaged about 25 per limb tap, but prebloom sprays were effective. Summer nymphs were lighter than during the past 3 years, with only a few incidents of psylla honeydew russet on fruit.

Pear psylla adults were observed in NEW YORK laying eggs in Ulster, Columbia, and Dutchess Counties April 10 and 11, the first egg laying was reported in the western counties April 17, and peak egg laying was reported from the field approximately one week after initial sightings. The first egg hatch was observed in Ulster and Columbia Counties April 28 and in western NEW YORK May 9 and 10. The first RHODE ISLAND adult emergence and egg laying in Providence County pear orchards occurred on May 16; cast skins and sooty mold were easily found on unprotected trees during the growing season. This species remains a major pest on pears in MICHIGAN.

SAN JOSE SCALE (Quadrastpidiotus perniciosus) in OREGON moved upward in Hood River Valley apple orchards. The increase is thought to be due to a relaxation of dormant sprays. From 1972 through 1974 this species increased in importance and continued to spread into new apple orchards in central and western MARYLAND. About 1,500 acres required controls.

WHITE PEACH SCALE (Pseudaulacaspis pentagona) remained the number one problem on peaches in Madison County. Limited observations showed 15 percent of the trees was infested and 3 percent was heavy enough to cause tree mortality or serious yield reduction.

EUROPEAN RED MITE (Panonychus ulmi) eggs started hatching in MICHIGAN on May 10 in Watervliet, Berrien County, and on May 13 in Hart, Oceana County. Red mites increased rapidly in many orchards early this past season due to an unusually warm June. As a result, some growers were required to apply controls before predator mites moved into the trees. Populations in MARYLAND have remained stable and light for the fourth season since 1972. Controls were adequate on apples. A heavy egg carryover in NEW YORK from 1974 was reported April 23 for Wayne and Oswego Counties. Egg hatching was reported May 11 in Wayne County and nymphs were fed on by many Typhlodromus pyri (a phytoseiid mite). Second brood P. ulmi eggs hatched June 13 in Wayne County. Populations were extremely light in NEW HAMPSHIRE this year, below economic levels on apples throughout the growing season due to extremely dry summer conditions. In MAINE, overwintering eggs began to hatch as usual on May 13. The first summer eggs were noted May 26, 7 days earlier than usual. Much hot and dry weather made this the major apple pest. Untreated trees had about 5 mites per leaf in mid-June and in 7-14 days reached 100-200 per leaf. Effective controls were necessary. Loss was 4 percent, twice that of 1974.

PEAR RUST MITE (Epitrimerus pyri) was difficult to control in WASHINGTON and reached damaging numbers in more pear orchards than in past years. Orchards in the Wenatchee, Chelan County, and Okanogan, Okanogan County, areas were economically infested in 1975.

FALL WEBWORM (Hyphantria cunea) activity in OKLAHOMA was reported from mid-May to mid-September. Scattered heavy infestations were present on pecan trees in the northeastern, east-central, and southeastern areas during July and August. Damage has generally increased across NORTH CAROLINA for the past 3 years. In August, 30-45 percent of the pecan trees observed had 1-10 webs, depending on tree size. Persimmons were readily infested and some 15-foot trees were completely webbed.

HICKORY SHUCKWORM (Laspeyresia caryana) adult emergence began in OKLAHOMA in late April in Payne County. Heavy numbers of adults were taken in light traps the first 14 days of July and the second week of September. Heavy larval infestations were found in pecan shucks in many east-central, south-central, central, and southwestern counties during October.

PECAN NUT CASEBEARER (Acrobasis nuxvorella) in NEW MEXICO continued to cause heavy damage in Eddy County pecan plantings throughout the season. The overwintering generation was observed pupating during early May. Adult emergence was noted May 25 through June 5. Second-generation larvae entered nutlets from August 8 and continued to hatch through September 8. A third and probably fourth generation was noted into early October.

First PECAN WEEVIL (Curculio caryae) catches of the season in MISSISSIPPI were in mid-August in Wilkerson County when 19 adults were caught in cone traps in one orchard. By late October, fully grown larvae were falling from nuts. Adult emergence began in OKLAHOMA in scattered areas the last week of July and a few heavy infestations were found in Jefferson County in early August. Emergence peaked the third week of August in several of the southwest counties but did not occur until mid-September in Tillman County, and peaked the last week of August in Love County. Infestations were heavy in many areas this year.

WALNUT HUSK FLY (Rhagoletis completa) in UTAH infested black walnuts as well as English walnuts, often severely in Davis, Salt Lake, Weber, and Utah Counties.

First generation of PECAN SPITTLEBUG (Clastoptera achatina) in MISSISSIPPI occurred in Lowndes County in late May. Spittle masses ranged 20-30 per mature tree in one 80-acre orchard. The second generation, in late June, had one mass per 10 limbs. Infestation in 1975 was heavier than in 1974.

PECAN PHYLLOXERA (Phylloxera devastatrix) caused heavy damage to many pecan and hickory trees in western TENNESSEE.

BLACKMARGINED APHID (Monellia costalis) had moderate to heavy numbers on pecan trees over a wide area of OKLAHOMA from late July to late August.

CITRUS

CITRUS ROOT WEEVIL (Pachnaeus litus) remained a serious threat to the lime groves of Dade County, FLORIDA, especially with the possible control restrictions.

A LEAFFOOTED BUG (Leptoglossus gonagra) reached economic levels in some east coast and southern FLORIDA groves. It was a problem in late August and continued as such into November; special sprays were applied by growers.

CITRUS SNOW SCALE (Unaspis citri) activity was lighter in FLORIDA than 1974 in the ridge and north-central areas. Overall, the east coast activity decreased. Releases of Aphytis lingnanensis (a eulophid wasp) continued, with the ridge area getting the greatest degree of control from this parasite.

CITRUS RUST MITE (Phyllocoptruta oleivora) was again the principal pest of citrus in FLORIDA, and remained at about the same numbers in 1975 as in 1974. The east-coast citrus district and the southern areas around Lake Okeechobee generally experienced less activity than around the ridge district.

SMALL FRUITS

Highlights

ORANGE TORTRIX heavily contaminated berries in Oregon. STRAWBERRY CROWN MOTH continued to be the worst pest of Oregon strawberries. TARNISHED PLANT BUG was severe on strawberries in New Hampshire and Maine. GRAPE PHYLLOXERA infested 18 of 22 grape cultivars in Pennsylvania. Hot weather seemed to control BLUEBERRY MAGGOT in Maine. EUROPEAN RED MITE bronzed several vineyards in Pennsylvania.

ORANGE TORTRIX (Argyrotaenia citrana) contaminated harvested boysenberries, marionberries, red raspberries, and blueberries in western Washington County, OREGON. Larvae, 6-8 per 100-ounce sample, were observed in harvested berries during late July and early August.

STRAWBERRY CROWN MOTH (Synanthedon bibionipennis) continued to be the most important insect pest of strawberries in Washington County, OREGON. The number of infested acres increased and many fields south of Cornelius, which were clean in 1974, now have light to moderate populations. Nearly one-third of the 2,400 acres in the county support crown moths. Light populations (less than 10 percent of crowns infested) occurred on 500 acres;

moderate (10-30 percent of crowns infested) on 150 acres; and heavy (more than 30 percent of crowns infested) were found on 125 acres.

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) was commonly damaging in Washington County vineyards in UTAH. Infestations were damaging at Kanab, Kane County, for the first time.

Unusual NEW YORK outbreaks of EIGHTSPOTTED FORESTER (Alypia octomaculata), up to 8 larvae per vine, were observed May 4 in vineyards in Schuyler and Yates Counties.

STRAWBERRY WEEVIL (Anthonomus signatus) clipped 50 percent of the strawberry fruiting buds in MAINE in several untreated patches. The loss was 25 percent in treated patches. The estimated loss was higher than in 1974.

BLACK VINE WEEVIL (Otiorhynchus sulcatus) caused severe damage in several cranberry bogs in Pacific and Grays Harbor Counties, WASHINGTON.

TARNISHED PLANT BUG (Lygus lineolaris) was severe on strawberries in some areas of Hillsborough County, NEW HAMPSHIRE. The resulting loss was 50-75 percent. This pest was responsible for up to 75 percent of deformed strawberries in many plantings, especial later varieties, in MAINE.

GRAPE PHYLLOXERA (Phylloxera vitifoliae) nymphs and adults infested 18 of 22 wine grape cultivars at 78 sites in Erie County, PENNSYLVANIA, by September to early October. The heaviest infestation occurred on Aurora, Chancellor, Seyval, and Villard Blanc; up to 70 percent of Aurora leaves sampled was infested. Galls ranged 1-182 (averaged 86.6) per leaf. Slight defoliation occurred and no more than 5 percent of the infested leaves was shed.

First and second-instar nymphs of MEADOW SPITTLEBUG (Philaenus spumarius) averaged about normal in OREGON. Counts of 1-2 per crown on 400 acres of Olympus, Hood, Shuxson, and Northwest variety strawberries were found at scattered locations in western Washington County in mid-May. Treatments had good results. Infestations in commercial and home garden strawberries were heavier in RHODE ISLAND during 1975 than in the past three years.

BLUEBERRY MAGGOT (Rhagoletis mendax) trapping indicated peak populations occurred in MAINE in mid-July in test fields. Larvae were almost completely absent in blueberries in these fields perhaps due to hot weather.

BLUEBERRY BUD MITE (Acalitus vaccinii) infestations decreased in Pender County, NORTH CAROLINA, compared to 1971-1973 data. Infestations were about equal in Duplin County and increased in Bladen County compared with the same data.

EUROPEAN RED MITE (Panonychus ulmi) eggs, nymphs, and adults caused foliar bronzing of Concord grapes in Erie County, PENNSYLVANIA, by early August. During the peak population, August 28, the number of mites ranged 4-164 (averaged 118) per leaf. Several vineyards had bronzed foliage and as a result, grape quality was reduced.

ORNAMENTALS

Highlights

On nursery stock a JAPANESE WEEVIL continued to grow in importance in Maryland, especially on azalea, holly, and privet. WESTERN TENT CATERPILLAR increased in Oregon. BAGWORM on evergreens was heavy in Oklahoma and was heavier in Arkansas. BIRCH LEAFMINER first brood was the heaviest in 5 years in Rhode Island. A ROYAL PALM BUG outbreak occurred in Florida; a WHITEFLY was heavy on ornamentals and trees, and continued its spread northward. A SOFT SCALE is of growing importance on Maryland hollies. JUNIPER SCALE was the heaviest in 5 years in Rhode Island. A TREEHOPPER is spreading northward on Florida woody legumes.

The importance and distribution of a JAPANESE WEEVIL (Pseudocneorhinus bifasciatus) continued to increase (since 1969) in Maryland and was the nineteenth most frequently detected pest on nursery stock. Azaleas, hollies (except American holly), and privet were the most seriously damaged. Adults in several areas caused 60-100 percent defoliation. Problems could be very serious in the next 3-4 years.

The first BLACK VINE WEEVIL (Otiiorhynchus sulcatus) adult emergence in RHODE ISLAND was on June 20; there was visible damage in unsprayed nursery blocks by July 25. There were no commercial nurseries with plants under quarantine in 1975; however, there was a heavy larval infestation of the roots of cyclamen plants in a commercial greenhouse in Newport County.

Large numbers of WESTERN TENT CATERPILLAR (Malacosoma californicum) adults were active in OREGON in late July in Marion and Linn Counties indicating an upward trend. Egg mass finds on commercial nursery stock were much more numerous in Washington and Multnomah Counties during fall inspections. This indicates a potentially heavy larval population in 1976.

BAGWORM (Thyridopteryx ephemeraeformis) larvae hatched by mid-April in Payne County, OKLAHOMA. Heavy infestations were present on evergreens in the southwest counties by late June and in many other areas during July and August. This species was heavier in ARKANSAS than it has been in several years. Widespread treatments were applied. Severe damage occurred on untreated evergreens.

PEACHTREE BORER (Sanninoidea exitiosa) caused many more problems in RHODE ISLAND on susceptible landscape trees than in 1974; however, the insect seems to be under control in northern commercial orchards.

VARIEGATED CUTWORM (Peridroma saucia) damaged flowers and other small ornamentals around homes in the eastern half of KANSAS from mid-May to mid-June.

BEET ARMYWORM (Spodoptera exigua) was light (0-3 per 10 plants) on gladiolus during the spring at Bradenton, Manatee County, FLORIDA, and heavy (0-6 per 10 plants) during the fall at Stuart, Martin County. The population was heaviest in late October to mid-November at Stuart.

VARIABLE OAKLEAF CATERPILLAR (Heterocampa manteo) heavily defoliated 1,000 acres of oak, mostly water oak, southern red oak, and laurel oak, in an area centered about 11 miles east of Gainesville, Alachua County, during mid-summer. The outbreak was terminated when larvae became heavily infected with a fungal pathogen, Entomophora sp.

BIRCH LEAFMINER (Fenusa pusilla) was active in RHODE ISLAND by May 23. By May 30, larvae averaged 2 per leaf in ornamental plantations. The first brood in 1975 proved to be the heaviest in 5 years in most of Providence County. The second brood appeared about July 2 but was much less destructive.

In FLORIDA a ROYAL PALM BUG (Xylastodoris luteolus) occurred in outbreak numbers on Roystonea regia (Cuban royal palm) in Dade, Broward, Palm Beach, Collier, Lee, and Hendry Counties. Yellowing and bronzing were prevalent on the leaves; some trees were severely injured where the populations were heavy, and this injury was a contributing factor to the death of some palms.

A WHITEFLY (Aleurodicus dispersus) has continued to build up and move northward in FLORIDA, going from Broward to Palm Beach County in 1975. It has been heavy on ornamentals and trees, including Cocos nucifera (coconut palm) and other palms.

The importance of a SOFT SCALE (Ceroplastes ceriferus) continued to increase in the nursery industry of MARYLAND. Heavily infested ornamental hollies could be found in almost every county east of Washington County.

JUNIPER SCALE (Carulaspis juniperi) was the heaviest in RHODE ISLAND in at least 5 years. Problems were mainly in unsprayed commercial nursery blocks. Controls applied during the latter part of the season were adequate.

TEA SCALE (Fiorinia theae) was the most destructive and widespread scale on Camellia sasanqua and Burford hollies, occurring all year in all counties in ALABAMA.

Mild winters in FLORIDA have allowed a TREEHOPPER (Umbonia crassicornis) to increase and extend its range northward to Ocala in Marion County, where it was found heavily infesting shrubs and several kinds of woody leguminous trees.

TWOSPOTTED SPIDER MITE (Tetranychus urticae) continued as one of the most injurious mite species in FLORIDA, injuring roses and many other herbaceous and woody ornamentals.

WEATHER OF THE WEEK ENDING OCTOBER 10

Reprinted from Weekly Weather and Crop Bulletin supplied by the National Weather Service, NOAA.

HIGHLIGHTS: Rains deluged the central Plains area early in the week and swelled waterways beyond flood stages in southwestern Texas. Observers noted mid-week rains and flooding in the southeastern States and eastern Great Lakes region. In addition, temperatures plummeted below freezing in Minnesota and North Dakota. Raging waterways overwhelmed their banks in Virginia, Maryland, Washington, D.C., and South Carolina, as heavy rains barraged the area over the weekend.

TEMPERATURE AND PRECIPITATION: Monday morning found a hard freeze in many areas west of the Continental Divide, while cloudy skies east of the Divide held warmer temperatures in abeyance. Spokane, Washington, reported frost in the early morning hours. Wet described the central Plains area, as a frontal system caused some showers and thundershowers. Heavy rainfall occurred in north central Kansas with amounts from 3 to 4 inches in a 24-hour period. Texas reported flash flood warnings in the southwestern counties, as McKavett noted almost 5 inches in one hour. The Devils River at Sonora hit flood stage and continued to rise. A cold Canadian air mass continued to move into the north-central section of the Nation on Tuesday. The air mass kept maximum temperatures in the 50's or lower through the upper half of the Rockies, the Plains States and the Mississippi Valley. A mixture of rain and snow fell through western Montana and Wyoming. Although rains helped to replenish the soil moisture supply in the Great Lakes area and the middle Mississippi Valley, they caused flash flood activity again in Texas. Alice, Texas, reported about 4.5 inches in a 6-hour period. Other significant rainfall for the 24-hour period included Wortham, Texas, 8.5 inches; Colgate, Oklahoma, around 6 inches; and 4.5 inches in Warrensburg, Missouri, and Groesbeck, Texas. The cold air mass moved southward on Wednesday, and clearing skies and light winds produced freezing temperatures, frost, and record low readings. The mercury plunged to a mere 18 degrees at St. Cloud, Minnesota, and just 19 degrees at Fargo, North Dakota.

As the day progressed, rain and snow developed over the central high Plains area. East of the Mississippi River, mostly cloudy skies prevailed. Another cold front pushed slowly into the eastern quarter of the Nation and triggered showers and thundershowers through the southeastern States and eastern Great Lakes area. The Tallahassee, Florida, area reported almost 6 inches of rain which caused small streams to overflow their banks and the flooding of homes and autos. South Bend, Indiana, set a new record on Wednesday for annual rainfall, with a total of 47.61 inches. This exceeded the normal level by 19.05 inches and broke the old record of 46.71 inches set in 1954. A large high pressure area, centered over southwestern Kansas, brought unseasonably cool temperatures in a wide area reaching from the Appalachians to the central and southern Rockies on Thursday. Afternoon temperatures in this area only reached to the 40 and 50 degree range. Clouds and light rain accompanied the cold temperatures in the southern Plains States, where Amarillo, Texas, and Las Vegas, New Mexico, each reported a high of 39 degrees. Midland, Texas, set a new record low of only 50 degrees for the date.

Weather of the week continued on page 752.

200)
New Geographical and Seasonal Distribution
Records for Thirty-one Species of
Virginia Shield Bugs

4 (Hemiptera: Scutelleridae, Cydnidae,
and Pentatomidae)

William A. Allen 1/ and Richard L. Hoffman 2/

Thirty-one species of shield bugs are listed with 59 new records for 53 counties and 6 independent cities in Virginia. Data also include new information on seasonal distribution in counties not previously known to be infested. The farthest inland Virginia record is reported for Podisus fretus Olsen, which had not previously been collected from the Piedmont region of the State. A species rarely collected in Virginia, Podisus modestus (Dallas) is listed. The first collection record for Homaemus parvulus (Germar) in the Coastal Plain of Virginia is recorded. The first record for Euschistus ictericus (Linnaeus) in southeastern Virginia is listed. The Albemarle County record for Proxys punctulatus (Palisot de Beauvois) is noteworthy because it is primarily found in the Coastal Plain. All specimens were adults and were determined by R.L. Hoffman. New independent city and county records are designated by an asterisk(*). All independent cities also have a county designation to preserve geographic continuity. References to publications listing previous records of shield bug distribution in Virginia are cited. Names appearing 3 or more times have been abbreviated. A list of abbreviations follows the text. Names appearing less than 3 times are not abbreviated.

SCUTELLERIDAE

Homaemus parvulus (Germar). An adult from the Independent City of Norfolk*, Norfolk County, November 28, 1974, PWL.

CYDNIDAE

Cyrtomenus ciliatus (Palisot de Beauvois). Collected from the Independent City of Suffolk, Nansemond County, July 10, 1974, JGB, and on July 4, 1975, JWJ.

Pangaesus bilineatus (Say). Specimens collected from the Independent City of Norfolk, Norfolk County, in April and on May 8, 1971, JWJ, and on October 23, 1974, D.P. Childs. Also collected in the Independent City of Suffolk, Nansemond County, May 10, 1975, PWL.

Sehirus cinctus cinctus (Palisot de Beauvois). Records include Caroline County*, May 9, 1975, VH; Isle of Wight County, August 21, 1974, JGB; Pittsylvania County, May 10, 1939, CBD; and Southampton County*, May 8, 1975, CRW.

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PENTATOMIDAE

Acrosternum hilare (Say). Taken from the Independent Cities of Norfolk*, Norfolk County, October 8, 1973, PWL; Suffolk, Nansemond County, June 6, 12 and 18, and July 12, 1975, JWJ; and Virginia Beach, Princess Anne County, May 24, 1974, SCM, and on June 24, July 15, 22 and 29, and August 5 and 28, 1975, WAA. Specimens also were collected from Chesterfield County, July 22, 1975, WAA; Montgomery County, May 16 and 26, 1974, WAA, on May 23, 1974, R. Hall, on July 10, 1974, A. Hamon, and on October 10, 1975, PWL; Nottoway County, May 20, 1975, CRW; Northumberland County*, October 2, 1974, W.F. Tate; Pittsylvania County, July 5 and 12 and August 5 and 21, 1972, CBD; Pulaski County, October 7, 1973, G. Morgan; Richmond County, October 2, 1974, W.F. Tate; Roanoke County, July 3, 1975, GLC; and York County*, November 11, 1973, D. Barnes.

Banasa calva (Say). Collected in the Independent City of Suffolk*, Nansemond County, June 18, 1975, feeding on corn, and July 11, 1975, in blacklight trap, JWJ. An adult also collected in James City County*, July 26, 1970, B. Davidson.

Banasa dimidiata (Say). Specimens collected from Independent Cities of Suffolk, Nansemond County, July 10 and 11, 1975, in blacklight trap, JWJ; and Virginia Beach, Princess Anne County, July 8, 1975, WAA; and from Chesterfield County*, July 22, 1975, WAA.

Banasa euchlora Stål. Collected by WAA from the Independent City of Virginia Beach, Princess Anne County, July 22 and August 26, 1975; Montgomery County, May 13, 1974; and Richmond County*, August 27, 1975.

Brochymena arborea (Say). One adult from Roanoke County, no date, W.D. Jones.

Brochymena quadripustulata (Fabricius). Specimens from the Independent Cities of Newport News, Warwick County, November 3, 1974, J. Vaughan; Norfolk, Norfolk County, October 20, 1974, PBS; and Virginia Beach, Princess Anne County, September 7, 1974, S.E. Bryant and on September 1, 1975, WAA. Records also include Appomattox County*, May 15, 1975, JHD; James City County, July 14, 1971, B. Davidson and on February 25, 1975, M.W. Bryant; Montgomery County, 1970, R. Peterson; and Pittsylvania County*, August 11, 1938, CBD.

Cosmopepla bimaculata (Thomas). Records include Albemarle County, August 3, 1974, SCM; Dinwiddie County*, May 21, 1975, CRW; Franklin County*, July 22, 1975, GLC; Montgomery County, July 1, 1974, and May 23, 1975, PWL; Rockbridge County, May 27, 1975, WAA; and Frederick County, July 1, 1975, WAA.

Edessa florida Barber. One adult from York County*, November 8, 1973, D. Barnes. Previous reports list Gloucester County*, October 6, 1971, F.B. Goode, (Allen, 1971) and York County, October 17, 1970, W.O. Holland, (Allen, 1975).

Euschistus ictericus (Linnaeus). Specimens collected from the Independent City of Virginia Beach*, Princess Anne County, May 15, 1970, J.C. Steere and on May 15, 1975, TS.

Euschistus luridus (Dallas). One adult from Giles County, September 28, 1974, C. Shedd.

Euschistus servus (Say). Adults collected from the Independent Cities of Norfolk, Norfolk County, October 10, 1973, PWL; Suffolk, Nansemond County, June 24 and 25, and July 8, 10 and 28, 1975, JWJ; Virginia Beach, Princess Anne County, May 10, 1970, by Fearington (no initials), on August 11, 1970, J.C. Steere, on June 8, 1974, SGM, on May 15, 1975, TS, and on August 5, 1975, WAA. Specimens also collected from Botetourt County, July 22, 1975, GLC; Brunswick County on May 22, 1975, CRW; Caroline County, October 20, 1973, RB, and on May 9, 1975, VH; Charlotte County*, May 16, 1975, CRW; Chesterfield County, June 27, 1975, WAA; Clarke County, May 19, 1975, M.A. Saucier; Dinwiddie County*, May 21, 1975, CRW; Franklin County*, July 22, 1975, GLC; Giles County*, June 25, 1974, L. Townsend; Greensville County*, May 29, 1975, JHD; Halifax County, May 16, 1975, CRW; Isle of Wight County, May 29, 1975, CRW; King George County, May 21 and 27, 1975, VH; Loudoun County, May 19, 1975, M.A. Saucier; Montgomery County, September 24, 1962, S. Chen, on September 27, 1973, R. Peterson, on October 6, 1973, B. Roach, on October 13, 1973, D. Eger, on November 7, 1973, RA, on July 3 and August 20, 1974, PWL, on November 8, 1974, D.B. Gucker, on May 2, 1975, W.W. Surles, and on September 1, 1975, PWL; Pittsylvania County, August 15, 16 and 17, 1938, March 28, 1939, and July 8, 1940, CBD; Northumberland County, July 23, 1975, WAA; Nottoway County*, May 20, 1975, CRW; Orange County, May 19, 1975, VH; Prince Edward County*, August 28, 1975, WAA; Prince George County, May 29, 1975, JHD; Pulaski County, October 6, 1975, G. Morgan; Southampton County, in October 1973, J. Bunch, on May 3, 27 and 29, 1975, CRW and on May 29, 1975, JHD; and Sussex County*, May 8, 1975, CRW, and on May 29, 1975, JHD.

Euschistus tristigmus tristigmus (Say). Adults taken from the Independent Cities of Norfolk, Norfolk County, October 11, 1973, PWL; and Suffolk, Nansemond County, May 16, 1970, by Brown and Becker (no initials), on April 18, 1971, JWJ, on April 30, 1972, ALP (as labeled), on October 28, 1973, and May 5, 1975, PWL. Also collected from Culpeper County*, May 7, 1975, VH; Isle of Wight County, September 4, 1975, WAA; Montgomery County, September 27, 1973, RA, and on October 26, 1974, R. Davis; Nelson County, August 29, 1975, GLC; Pittsylvania County*, April 21, 1937, and March 7, 1940, CBD; Richmond County*, June 20, 1975, WAA; Southampton County*, May 8, 1975, CRW; and Warren County*, June 12, 1975, R.L. Pienkowski.

Euschistus tristigmus pyrrhocerus Herrich-Schaeffer. WAA collected specimens from the Independent City of Virginia Beach, Princess Anne County, July 22 and 29 and August 5, 1975; Chesterfield County*, July 22, 1975; and Isle of Wight County, September 4, 1975.

Euthyrhynchus floridanus (Linnaeus). Specimens collected from the Independent Cities of Norfolk, Norfolk County, August 10, 1973, PWL, and on September 10, 1974, PBS; and Virginia Beach*, Princess Anne County, June 18, 1974, SGM. A specimen also collected from Prince George County*, June 12, 1974, unidentified collector.

Holcostethus limbolarius (Stål). Records include Appomattox County*, May 15, 1975, JHD; Franklin County*, July 22, 1975, GLC; Montgomery County, October 4, 1974, O. Peka; Orange County*, May 19, 1975, VH; and Pittsylvania County*, March 1 and April 3, 1939, CBD.

Hymenarcys nervosa (Say). Independent City of Virginia Beach, Princess Anne County, July 1, 1975, WAA; Pittsylvania County*, April 11 and June 3, 1939, and May 17, 1940, CBD; and Montgomery County, September 10, 1974, PWL.

- Mormidea lugens (Fabricius). Dinwiddie County*, May 21, 1975, CRW; Pittsylvania County, June 6, 7 and 11, 1939, CBD; and Montgomery County, October 16, 1974, J. Trumble.
- Murgantia histrionica (Hahn). Imagoes from the Dismal Swamp in the Independent City of Suffolk, Nansemond County, September 9, 1974, D.P. Childs; Caroline County, October 20, 1973, RB; King George County*, May 5, 1975, VH; Montgomery County, August 10, 1974, A. Hamon, and on September 9, 1974, M. Parrella; and Wise County*, August 10, 1974, D. Simonet.
- Oebalus pugnax (Fabricius). Independent City of Virginia Beach, Princess Anne County, May 13, 1975, TS, and on August 26, 1975, WAA; Charlotte County*, August 29, 1972, P.W. Houghby, and on May 16, 1975, CRW; Dinwiddie County*, May 21, 1975, CRW; Gloucester County*, July 22, 1975, WAA; Isle of Wight County, May 29, 1975, CRW; King George County*, May 27, 1975, VH; Lunenburg County*, May 16, 1975, CRW; Mecklenburg County, May 16, 1975, CRW; Middlesex County*, July 22, 1975, WAA; Montgomery County, September 1, 1974, FWL; Pittsylvania County*, August 11, 1938, CBD; and Sussex County*, May 29, 1975, JHD.
- Podisus fretus Olsen. One adult from Pittsylvania County*, April 11, 1939, CBD.
- Podisus maculiventris Say. Imagoes from Independent Cities of Chesapeake, Norfolk County, August 28, 1975, WAA; Portsmouth, Norfolk County, September 8, 1975, WAA; Suffolk, Nansemond County (Dismal Swamp), September 30, 1972, by Levesque (no initials); and Virginia Beach, Princess Anne County, June 6, 1975, PBS, and on August 5, 1975, WAA. Adults also from Isle of Wight County, July 24, 1974, JGB, and on August 28, 1975, WAA; Montgomery County, October 3, 1973, RA, on September 8, 1974, and May 23, 1975, FWL; and Pittsylvania County*, April 26, 1939, CBD.
- Podisus modestus (Dallas). One adult from Giles County*, November 9, 1974, by J. Haas.
- Proxys punctulatus (Palisot de Beauvois). Independent City of Suffolk, Nansemond County, June 6, 1975, JWJ; and Albemarle County*, August 3, 1974, SGM.
- Stiretrus anchorago fimbriatus (Say). Records include the Independent City of Virginia Beach*, Princess Anne County, June 26, 1974, SGM; Caroline County*, September 20, 1973, RB; Isle of Wight County*, August 5, 1975, WAA; Pittsylvania County*, June 15, 1944, L.A. Hetrick; and Montgomery County, July 10, 1974, and June 30, 1975, by FWL.
- Thyanta calceata (Say). Imagoes from Montgomery County, September 30, 1973, by Serabian (no initials), and on October 8, 1975, FWL.
- Thyanta pallidovirens accera McAtee. Independent Cities of Norfolk, Norfolk County, September 12, 1973, unidentified collector, and on October 3 and 10, 1973, FWL; and Virginia Beach, Princess Anne County, May 17, 1970, Steere (no initials). Imagoes also from Charlotte County, May 16, 1975, CRW; King George County, May 21, 1976, VH; Montgomery County, October 28, 1973, B. Roach; Pittsylvania County, August 16, 1940, CBD; Prince Edward County, August 28, 1975, WAA; and Richmond County, June 20, 1975, WAA.
- Trichopepla semivittata (Say). Pittsylvania County*, March 26, May 2 and June 1, 1939, CBD; and New Kent County*, June 16, 1940, L.A. Hetrick.

Abbreviations for collectors listed 3 times or more

CBD, C.B. Dominick; CRW, C.R. Whitley; GLC, G.L. Clement; JGB, J.G. (Burt) Knausenberger; JHD, J.H. Daughtrey; JWJ, J.W. Jenkins; PBS, P.B. Schultz; PWL, P.W. Larkins; RA, R. Anderson; RB, R. Banks; SGM, S.G. McCausland; TS, T. Szarzynski; VH, V. Hoyos; WAA, W.A. Allen.

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- Allen, W.A. 1975. A Stinkbug (Edessa florida) Virginia Coop. Econ. Insect Rep. Oct. 24. 1 p. mimeog.
- Allen, W.A. and R.L. Hoffman. 1975. Distribution records of several Virginia Shield Bugs (Hemiptera: Scutelleridae, Corimelaenidae, Cydnidae, Pentatomidae). U.S. Dep. Agric. Coop. Insect Rep. 25(12):233-236.
- Hoffman, R.L. 1971. Shield Bugs (Hemiptera: Scutelleroidea: Scutelleridae, Corimelaenidae, Cydnidae, Pentatomidae). Virginia Polytech. Inst. and State Univ., Res. Div. Bull., p. 1-61, illus.

U.S. Dep. Agric.
Coop. Plant Pest Rep.
1(41):747-751, 1976

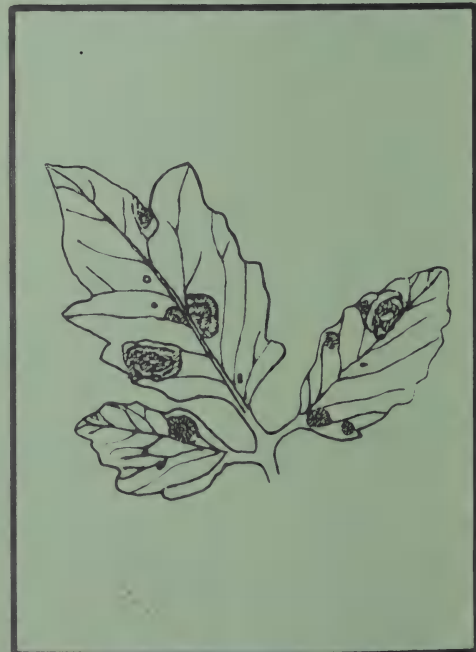
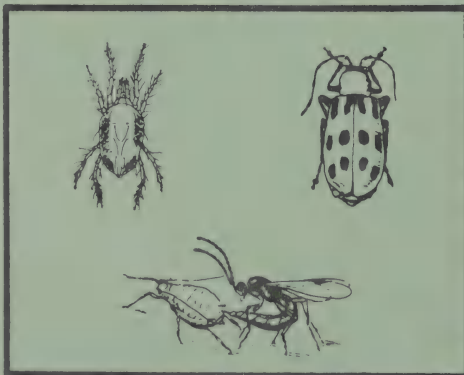
Weather of the week continued from page 746.

A warming trend started in the northern Rockies. Havre, Montana, recovered from a morning low of 24 degrees to an afternoon high of 74 degrees. Wet weather dominated the eastern section of the Nation on Thursday. Showers and thundershowers soaked much of the Appalachians and the southern Atlantic Coast. Street flooding was common in Greenville, South Carolina, with water on one street as much as 8 feet deep. The Reedy River surpassed the flood stage by 3 feet and continued to rise. Mild temperatures prevailed in the Pacific Northwest, with 70's and 80's in most places. Medford, Oregon, reached 90 degrees, the highest reading ever so late in the season. Mercuries also lingered in the 89 and 90 degree range in the interior of California. A stationary front across the eastern United States produced rains over the Atlantic Coast States and the Appalachians on Friday. Flash flood alerts and some actual flood activity resulted. Just over 2 inches of precipitation fell over Athens, Georgia, in a 6-hour period, while Roanoke, Virginia, received nearly 3 inches in a 24-hour period. Greenville, South Carolina, reported more than 5 inches in a 2-day period, as more than 8.5 inches inundated Tallahassee, Florida, in 3 days. Clouds and light rain extended along much of the Gulf Coast region and kept temperatures unseasonably cool. Houston, Texas, noted a high of only 55 degrees. A few light showers moved across the upper Mississippi Valley and the northwestern Great Lakes region during the day. Snow fell for a short time at Duluth and International Falls, Minnesota. Warm air produced above normal temperatures along the coastal areas of southern California, as highs climbed to 99 degrees at Long Beach, 95 degrees at Los Angeles, and 91 degrees at San Diego. An icy stab of frost and freezing temperatures thrust into the northeastern States on Sunday. Rampaging water continued to overwhelm the banks of the Potomac River in Virginia, Maryland, and Washington, D.C., and the Congaree and lower Broad Rivers in South Carolina.

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October 22, 1976

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Cooperative PLANT PEST REPORT

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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
Federal Building #1
Hyattsville, Maryland 20782

COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

Some light to heavy and scattered FALL ARMYWORM infestations on wheat in Oklahoma and Kansas. (p. 756). Heavy on lawns and pastures in Texas and South Carolina. (p. 757). Heavy on alfalfa in Reno County, Kansas. Economic on soybeans in Alachua County, Florida. (p. 758). Some feeding on peanuts in Mississippi and coconut in Florida. (p. 759).

TOBACCO BUDWORM severely damaged cotton in Imperial County, California. (p. 759).

Program to remove infected and exposed elm trees in California to control DUTCH ELM DISEASE continued at several locations. (pp. 762-763).

- MEDITERRANEAN FRUIT FLY declared eradicated in California. (p. 763).

Dramatic increase in trapping of native PINK BOLLWORM moths in Tulare County, California, due to storm. (p. 763).

Detection

- A SPHINGID MOTH is a new United States record in Hawaii, not known to occur in the continental U.S. (p. 764).
- A DELPHACID PLANTHOPPER in Florida is a new continental U.S. record. (p. 764).

New State records include a SCOLYTID BEETLE (p. 761) and an ARMORED SCALE (p. 762) in Alabama, and 2 WHITEFLIES in Hawaii (p. 764).

For new county and island records see page 766.

Citrus is a new host record for a SOFT SCALE in Hawaii. (p. 765).

Special Reports

Summary of Insect Conditions in the United States - 1975.

Forest Insect and Disease Highlights. (pp. 771-775).

Forest and Shade Trees (pp. 775-780).

Man and Animals (pp. 781-785).

Households and Structures (p. 785).

Additional Data on Holly Leafminer Adults (Diptera, Agromyzidae: Phytomyza ilicis-ilicicola group) (pp. 767-770).

Reports in this issue are for the week ending October 15, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

CORN EARWORM (Heliothis zea) - FLORIDA - Subeconomic on sorghum heads week of October 8. Damaged sorghum whorls totaled 40 acres near Chiefland, Levy County, and 200 acres in Marion County. (FL Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - UTAH - Extremely heavy in popcorn field at Wellsville, Cache County. Lady beetles and anthocorid bugs controlling infestations. (Roberts, Knowlton).

GREENBUG (Schizaphis graminum) - WASHINGTON - Winged and wingless specimens 5-20 per wheat plant in Douglas County October 5. Damaged areas noted in fields. (Tiggs, Klostermeyer). OKLAHOMA - Ranged 5-8 per row foot in Harmon County wheat week of October 8. Light, fewer than one per row foot, in many fields in southwest and west-central areas. (OK Coop. Sur.). KANSAS - Destroyed irrigated wheat field and killed 5-inch early planted wheat in spots in second irrigated field near Nickerson, Rice County. Damaged early planted wheat in Sumner County in localized area. Infestations trace in dryland wheat in Barton, Pratt, Stafford, and Ford Counties. None found in dryland wheat in Reno, Sedgwick, Harper, Seward, Stevens, Haskell, Morton, Kearny, Gray, Grant, Osage, Lyon, Chase, Marion, and Dickinson Counties. (Bell).

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Light, one per 20 sweeps, on alfalfa in Dane, Sauk, and Grant Counties week of October 8. (WI Pest Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - KANSAS - Some threatening infestations on seedling alfalfa near Haven, Reno County. (Bell).

TOBACCO BUDWORM (Heliothis virescens) - ARKANSAS - Heavy on southern peas in southeast area. Larvae feeding at 2-3 per pod noted. Of 23 larvae (one sample) from pea fields, 22 H. virescens and one CORN EARWORM (H. zea). (Wall).

CORN, SORGHUM, SUGARCANE

DISEASES

MAYDIS CORNSTALK ROT (Diplodia maydis) - MINNESOTA - Corn infection light with some severe cases in Waseca County week ending October 8. Light to moderate in 6 districts. (MN Pest Rpt.).

FUJIKUROI ROT (Gibberella fujikuroi) - NEW MEXICO - Caused lodging and subsequent crown growth in several milo fields near Deming, Luna County, after several days of rain week of October 8. (NM Pest Rpt.).

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH CAROLINA - Corn-stalk breakage most severe in Robeson, Hoke, and Columbus Counties. Caused 32-96 percent stalk breakage in 8 known infested fields in Robeson and Hoke Counties. About 15 percent of infested stalks broken below ear. Lodging rate in these counties significantly higher than 5 percent State average. (Baxley, Williford).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - OKLAHOMA - Girdled stalks 4-80 (averaged 36.6) percent and lodged stalks 4-80 (averaged 28.3) percent in 12 corn fields in Texas and Cimarron Counties. Percentages should increase before harvest as 3 of fields had nearly 100 percent of stalks infested. Loss of 2.8-16.4 (averaged 11.6) bushels per acre noted in 4 Texas County fields. (OK Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Heavy on wheat in Roger Mills County and light in Beckham County. (OK Coop. Sur.).

SORGHUM WEBWORM (Celama sorghiella) - ARKANSAS - Heavy, required treatment, in isolated fields of late sorghum in Craighead County. (Kimbrough).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Collected on corn 2 miles east of Bushton, Coles County, by W.R. Harryman September 30, 1976. Determined by J. Bouseman. This is a new county record. (IL Pest Sur.). WISCONSIN - Corn rootworm egg survey underway, 230+ corn fields sampled concurrently with statewide fall pest survey. Egg averages per pint of soil by county: Dane near Mazomanie (3 fields) 4.3, near Mt. Horeb (one field) zero; Walworth near La Grange (5 fields) 3.7, ranged 0-11. Total of 226 samples to be processed. (WI Pest Sur.).

SORGHUM MIDGE (Contarinia sorghicola) - OKLAHOMA - Damage 50+ percent in field of late grain sorghum in Muskogee County. (OK Coop. Sur.).

SMALL GRAINS

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Scattered, heavy infestations in volunteer and planted wheat in Harper and Alfalfa Counties week of October 8. Light to moderate in most northwest fields. Some fields treated. Heavy; destroyed spots in rye fields in one area of Harper County. Scattered heavy infestations in Grant County, especially in Washita and Manchester areas. Some scattered moderate infestations in Garfield County; some fields treated. Ranged 20-30 per square foot in many volunteer wheat fields in west-central area; only in some planted wheat fields in Caddo and Washita Counties. Scattered heavy infestations in Beckham and Roger Mills Counties; some moderate infestations in Blaine County. Some fields treated, especially in Caddo and Washita Counties. Heavy in scattered fields in Canadian County. Light in Muskogee County. Ranged 1-6 per square foot of wheat in southwest area. Percent of infested fields estimated by county: Harmon 50, Cotton and Tillman 20-30, Greer and Jackson 5.

Scattered infestations moderate to heavy in Kiowa and Comanche Counties and in oats and rye in Harmon County. Some fields treated in all counties, especially Harmon. Scattered heavy infestations in Stephens and Jefferson Counties, some fields treated. Currently, one wheat field treated in Beaver County. Ranged 25-30 per square foot in some areas of Harper County and 3-4 per square foot in some Alfalfa County fields. Light to heavy in Major County and light to moderate in Woodward County. Scattered heavy infestations in Roger Mills, Beckham, Washita, and Dewey Counties. Infestations 2 per row foot in Tillman County and scattered light to moderate in most other counties. Scattered and moderate in Garfield County. Heavy in one Pawnee County field. Light to moderate in wheat and oats in south-central area. Light in Muskogee and Sequoyah Counties. Fields treated in some counties in the north-central, northwest, and west-central areas. (OK Coop. Sur.). KANSAS - Isolated damage to wheat fields serious in Harper, Butler, Reno, Republic, and Osborne Counties. Two fields (about 200 acres) near Freeport, Harper County, eaten to ground level, similar situation near Partridge, Reno County. Damage light to moderate in wheat in Reno, Sedgwick, Sumner, and Harper Counties. Larvae from newly hatched to 1.25 inches long. Infestations sometimes much heavier along field borders. Some heavier infestations in "stubble-mulched" fields or fields with much straw residue from previous crop. Some larval feeding damage on wheat in Cowley, Barber, and Kiowa Counties. Light feeding in some fields in Barton, Stafford, Ford, Gray, Morton, Stevens, and Seward Counties. (Bell).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Stand loss 5-10 percent in one wheat field in Caddo County week of October 8. Some larvae noted in Canadian County and in volunteer wheat field in Blaine County. (OK Coop. Sur.).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Heavy in lawns in Liberty, Brazos, Montgomery, and Harris Counties. Present in small grains in the High Plains. (Cole, Morrison). SOUTH CAROLINA - Heavy in several pastures, 20 to 25-acres size, in Newberry County week of October 8. Larvae, first to third instar, 3-8 per square foot. Pastures planted to rye grass and rye grass and alfalfa. Volunteer sorghum very prevalent in one field. Infestations heavy but noted early enough that damage very light. Controls recommended; rain threatened to delay applications. (Douglass).

BLACK VINE WEEVIL (Otiorhynchus sulcatus) - IDAHO - Adults averaged 8-10 per square yard on desert type habitat near Twin Falls golf course, Twin Falls County. (Simpson, Waters).

BLUEGRASS BILLBUG (Sphenophorus parvulus) - MARYLAND - Second generation heavy in 60 acres of commercial bluegrass sod at Sunshine, Howard County; controls not effective. (U. Md., Ent. Dept.).

SOUTHERN CHINCH BUG (Blissus insularis) - CALIFORNIA - Infested St. Augustinegrass lawn at El Centro, Imperial County. Specimens collected by R. Flock August 16, 1976. Determined by A. Hardy. This is a new county record. (CA Pest Rpt.).

FORAGE LEGUMES

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - KANSAS - Larvae 0.25-1.25 inches long, heavily defoliated 10-inch alfalfa in one field near Partridge, Reno County. Treatments applied. Threatening infestations in seedling alfalfa near Haven, Reno County. (Bell).

ALFALFA CATERPILLAR (Colias eurytheme) - NEW MEXICO - Adults unusually heavy, emerging from alfalfa in Chaves, Eddy, and Otero Counties week of October 8. Controls needed. (NM Pest Rpt.).

ALFALFA WEEVIL (Hypera postica) - NEW MEXICO - Larval activity and resultant damage continued through October 1 in Torrance, Eddy, Chaves, and Bernalillo Counties. Few controls applied. (NM Pest Rpt.). MISSOURI - Adults 2.8 per 10 sweeps of alfalfa in central area and 1.2 per 10 sweeps in northwest area week ending October 9. Adults 3-16 per 10 sweeps currently active in all forage legume fields checked in northwest area. (Munson).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - WISCONSIN - Ranged 0-4 per sweep on alfalfa in Sauk County week of October 8. Feeding evident in terminals. (WI Pest Sur.).

PEA APHID (Acyrtosiphon pisum) - OKLAHOMA - Adults active in some areas of western Cimarron County. (OK Coop. Sur.). WISCONSIN - Averaged 10 per sweep in Grant County alfalfa field week of October 8. Lighter in Sauk and Dane Counties. (WI Pest Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - MISSOURI - Adults on alfalfa and red clover in central and northwest areas week ending October 9. Adults fewer than one per 10 sweeps on alfalfa. Ranged 1-8.5 (averaged 3) per 10 sweeps in red clover in central area. (Munson).

THREECORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Ranged 10-20 per 10 sweeps on alfalfa in Le Flore County. (OK Coop. Sur.).

SOYBEANS

INSECTS

VELVETBEAN CATERPILLAR (Anticarsia gemmatilis) - ALABAMA - Usual late developing, but heavy, larval population completely destroyed 80-acre field of late-planted soybeans at Doves, Mobile County. (Lockhart). FLORIDA - Larvae on soybeans near Alachua, Alachua County, week of October 8; 54 acres needed treatment. (FL Coop. Sur.).

FALL ARMYWORM (Spodoptera frugiperda) - FLORIDA - Infested 35 acres of 360-acre soybean planting near Alachua, Alachua County; treatment required. (FL Coop. Sur.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - ILLINOIS - Fed on soybeans at Dixon Springs, Pope County, September 29. Although widespread in State, soybean feeding unusual. (IL Pest Sur.).

PEANUTS

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - MISSISSIPPI - This species and CORN EARWORM (Heliothis zea) fed on late-planted peanuts in Coahoma County, damage undetermined. (Anderson).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Infested up to 70 percent of Florunner peanuts in Marshall County week of October 8. (OK Coop. Sur.).

COTTON

INSECTS

BOLLWORMS (Heliothis spp.) - CALIFORNIA - TOBACCO BUDWORM (H. virescens) heavy in many cotton fields resulting in severe damage in Imperial County. Ideal weather, availability of late cotton, loss of 2 insecticides, increased acreage, and rain all aided population increase. (CA Pest Rpt.). NEW MEXICO - BOLLWORM (H. zea) in upper bolls prior to freeze in Lea County nearly at control levels. Majority of cotton fields within 0.50 mile of large corn plantings (NM Pest Rpt.). TEXAS - H. zea egg and larval pressure decreased considerably in El Paso Valley as cotton neared maturity. (Burgess). MISSISSIPPI - Bollworms along with CABBAGE LOOPER (Trichoplusia ni) fed on new growth of mature cotton in Noxubee County. Ranged 0.5-5 per row foot in 100 acres. No damage to harvestable cotton. (Anderson).

BOLL WEEVIL (Anthonomus grandis) - OKLAHOMA - Adult activity still heavy on cotton in southwest counties week of October 8, indicates heavy numbers to enter diapause in this area. (OK Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

INSECTS

APPLE APHID (Aphis pomi) - UTAH - Very heavy on apple foliage at Wellsville, Cache County. (Roberts, Knowlton).

APPLE LEAFHOPPER (Empoasca maligna) - UTAH - Very heavy and discolored foliage in home apple orchard at Wellsville, Cache County. (Knowlton, Roberts).

BLACKMARGINED APHID (Monellia costalis) - OKLAHOMA - Heavy on pecan trees in Love County. (OK Coop. Sur.).

OTHER TROP. & SUBTROP. FRUITS

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - FLORIDA - Larvae moderate on leaves of about 50 of 100 Cocos nucifera (coconut) trees, at Miami, Dade County, October 7. (FL Coop. Sur.).

ORNAMENTALS

INSECTS

LILAC LEAFMINER (Caloptilia syringella) - OREGON - Damaged leaves of green ash seedlings grown for understock in eastern Multnomah County commercial nurseries week ending October 8. Infestations generally moderate. Foliage also damaged by a PLANT BUG (Tropido-
steptes pacificus). (Nicolaïson).

MOURNINGCLOAK BUTTERFLY (Nymphalis antiopa) - NEW MEXICO - Pupation underway on ornamentals in Las Cruces area, Dona Ana County, week of October 8. (NM Pest Rpt.).

A NOCTUID MOTH (Datana major) - ALABAMA - Full-grown larvae practically defoliated 30 azalea plants, at Leeds, Jefferson County. This pest seldom found this far north. (Strahan).

A NITIDULID BEETLE (Conotelus mexicanus) - NEW MEXICO - Large numbers moved into blooms on roses and chrysanthemums. Activity on late native blooms in Las Cruces area, Dona Ana County. (NM Pest Rpt.).

A SOFT SCALE (Pulvinaria floccifera) - OREGON - Heavy on yew at large commercial nursery near Gresham, Multnomah County, week of October 8. Infested all of about 1,000 brown yew. Mobile and newly settled crawlers heavy. (Nicolaïson, Westcott).

SCALE INSECTS - ALABAMA - These collections are new county records: FERN SCALE (Pinnaspis aspidistrae) on Zebrina pendula (wanderingjew zebrina) at Marion, Perry County, by W.O. Hairston, September 21, 1976; an ARMORED SCALE (Aonidomytilus solidaginis) on Solidago sp. (goldenrod), at Clanton, Barbour County, by B.J. Muse, September 9, 1976; EUONYMUS SCALE (Unaspis euonymi) on Euonymus japonicus var. aureo-variegatus (goldspot evergreen euonymus), at Gordon, Pickens County, by L. Craft, July 9, 1976; CAMELLIA SCALE (Lepidosaphes camelliae) on Camellia sp. (camellia), at Gordon, Pickens County, by L. Craft, July 8, 1976. All determinations by M.L. Williams. (McQueen).

FOREST AND SHADE TREES

DISEASES

SPRUCE TWIG BLIGHT (Valsa kunzei var. piceae) - RHODE ISLAND - Heaviest in at least 3 years on residential spruce trees in Providence County. No increase reported for forest trees. (Relli).

INSECTS

PINE NEEDLE SCALE (Chionaspis pinifoliae) - MONTANA - Heavy on spruce trees at Butte, Silver Bow County, and Townsend, Broadwater County, week of October 8. (Jensen).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Adults still taken by multilure traps in the Willamette Valley but numbers low. Most recent counts by county: Marion none at Salem October 5-11; Multnomah 14 at Portland October 8-14. (Penrose).

A SCOLYTID BEETLE (Xylosandrus compactus) - ALABAMA - Adults and larvae damaged smaller branches of oak, dogwood, and other unidentified trees at Mobile, Mobile County. Collected by C.B. Vickery August 30, 1976. Determined by D.M. Anderson. This is a new State record. (McQueen).

TWOMARKED TREEHOPPER (Enchenopa binotata) - MASSACHUSETTS - Adults still present in Amherst area, Hampshire County, laying eggs on twigs of bittersweet. (Mankowsky).

TULIPTREE APHID (Macrosiphum liriodendri) - CALIFORNIA - Heavy on tuliptrees at Stockton and Lodi, San Joaquin County. Excessive honeydew dripping from trees prematurely losing leaves. (CA Pest Rpt.).

WOOLLY ALDER APHID (Prociphilus tessellatus) - ALABAMA - Developing populations practically covered many base stems of alder shrubs and trees along roadsides in Talladega National Forest area of Cleburne County. (Pigott et al.).

AN APHID (Therioaphis tiliae) - NEVADA - General moderate infestations, some heavy infestations, and large amounts of honeydew on scattered linden trees at Reno, Washoe County. (Bechtel).

AN APHID (Lachnus salignus) - NEVADA - Heavy on willow with large amounts of honeydew on ground and pavement beneath trees in southern Washoe County week ending October 8. Currently these unusually heavy and widespread infestations remain on willow in Reno and Sparks area, Washoe County, and heavy infestation present in Carson City and Douglas Counties. (Bechtel).

A SPIDER MITE (Eotetranychus weldoni) - UTAH - Heavy counts webbed branches and trunk of willow trees at Castle Dale, Emery County, October 4. (Roberts, Larson).

MAN AND ANIMALS

DISEASES

AN EYE NEMATODE (Thelazia rhodesii) - MASSACHUSETTS - Data gathered statewide July 9 to September 7. Collections of vector, Musca autumnalis (face fly), 300 per site, 19 sites in all. Nematode infection of vector ranged 0-13.2 percent at Hadley, Hampshire County. No infected mammalian hosts detected to date, but presence suspected. (Gedden).

INSECTS

HORN FLY (Haematobia irritans) - OKLAHOMA - Heavy (300-500 per head) on cattle checked in Payne, Noble, Garfield, and Logan Counties. (OK Coop. Sur.).

A MOSQUITO (Culex pipiens quinquefasciatus) - MISSISSIPPI - Adults totaled 52 in 3 baited traps in rural areas of Oktibbeha County. Adults 31 in 3 baited traps in urban areas. Populations in urban areas increased due to decreased fogging. (Bertsch).

AMERICAN DOG TICK (Dermacentor variabilis) - WASHINGTON - One specimen taken on child at Pasco, Franklin County, October 10. Other specimens taken on dogs and wandering on furniture in residence. Activity seems unusually late in season and indicates heavy infestation in area. (Anderson, Retan).

WESTERN BLACK WIDOW SPIDER (Latrodectus hesperus) - NEVADA - Large numbers continued to migrate into homes and other structures in southern Washoe County. (Bechtel). UTAH - Very numerous on stored furniture in a garage requiring fumigation at Logan, Cache County. One in home bedroom at Tooele, Tooele County. (Roberts, Hoffman).

MISCELLANEOUS WILD PLANTS

INSECTS

AN ARMORED SCALE (Aonidomytilus hyperici) - ALABAMA - Collected on Hypericum fasciculatum (sandbush St. Johnswort) at Union Springs, Barbour County, by B.J. Muse, September 9, 1976. Determined by M.L. Williams. This is a new State record. (McQueen).

STORED PRODUCTS

INSECTS

FLAT GRAIN BEETLE (Cryptolestes pusillus) - NORTH DAKOTA - Adults infested 160,000 bushels of barley and wheat in Cass County. (Scholl).

POTATO TUBERWORM (Phthorimaea operculella) - VIRGINIA - Larvae continue to cause serious problems to home grown and stored white potatoes week ending October 8. Most recently found in Louisa and Lunenburg Counties. No satisfactory legal control measures. (Allen).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

A PUNCTUREVINE SEED WEEVIL (Microlarinus lareynii) - OKLAHOMA - Larvae infested puncturevine seed 2 miles south of Watonga, Blaine County, October 6, 1976. Collected and determined by D.C. Arnold. This is a new county record. (OK Coop. Sur.).

A CHALCID WASP (Brachymeria ovata) - NEW MEXICO - Parasitized about 78 percent of sample of approximately 2,000 Hemileuca oliviae (range caterpillar) pupae taken from Clayton area, Union County. (NM Pest Rpt.).

FEDERAL AND STATE PROGRAMS

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - CALIFORNIA - Ten trees removed at Marin, Marin County. Stump removal, herbicide treatments, and trenching nearly completed. Five infected and 52 exposed trees removed from multitree systemic infection at Sonoma,

Sonoma County. Seventeen positives confirmed there, indicated widespread root graft. Cutting started in Glen Ellen and at Henno Road site. Exposed trees on Stanford campus, Palo Alto, Santa Clara County, taken out. Treatment crews sprayed dying elms on Stanford campus; applied chemicals to root systems and suckers in host removal zones. (CA Pest Rpt.).

INSECTS

JAPANESE BEETLE (Popillia japonica) - NORTH CAROLINA - Larvae of this species and GREEN JUNE BEETLE (Cotinis nitida) damaged 25 acres (averaged 5 per square foot) of clover and fescue pastures in southern Wake County week ending October 8. Larvae 25 per square foot in 0.25-acre spots. Treatments applied to entire acreage. (Hunt). RHODE ISLAND - Early larvae damaged residential turf in Kent County; most damage in southern areas of State. (Larmie, Relli).

MEDITERRANEAN FRUIT FLY (Ceratitis capitata) - CALIFORNIA - All fruit collecting ended September 30 in Los Angeles County. Fruit will be held until October 29. Last sterile adult taken September 17. (CA Pest Rpt.). Eradicated as of August 2. (PPQ).

MORMON CRICKET (Anabrus simplex) - IDAHO - Fall survey showed scattered infestations in Lewis, Adams, Washington, Valley, Gem, Ada, Owyhee, Elmore, Power, Oneida, Franklin, Bonneville, and Caribou Counties. Migrating bands noted in Washington, Power, Elmore, and Caribou Counties. (Pollard).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Delimitation of find at San Diego, San Diego County, completed on September 24. Male annihilation efforts 30 percent complete. (CA Pest Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Six native moths reported from Kern County: One from Buena Vista Lake bed, one each from vicinity of Gosford and Tupman, and 3 from Button-willow. The total for Kern County now stands at 15. Kings County recorded a native moth from Hanford area, third for season. Tulare County experienced dramatic increase in native catches as result of storm that came from the south. Kings County added to sterile release list. To date total of 125,879,260 sterile moths released in San Joaquin Valley; mostly in Kern and Tulare Counties. (CA Pest Rpt.). NEW MEXICO - Surveys in Eddy and Dona Ana Counties prior to freeze negative. Apparently overwintering populations will be nil. (NM Pest Rpt.). TEXAS - Boll cuttings last period indicated 8-10 percent infestation in isolated fields at Ysleta end of the El Paso Valley. Majority of fields had 0-2 percent damage. (Burgess).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Adult emergence continued week of October 8, probably 50 percent complete. (NM Pest Rpt.). OKLAHOMA - Adults active in some areas of western Cimarron County. (OK Coop. Sur.).

SCREWORM (Cochliomyia hominivorax) - Total of 1,938 cases reported from continental U.S. September 26 to October 2 as follows: Oklahoma 5, Texas 1,913, New Mexico 8, Arizona 12. Total of 503 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 798 cases reported in Mexico south of Barrier Zone. Number

of sterile flies released this period totaled 208,197,400 as follows: Oklahoma 1,647,000; Texas 173,322,400; New Mexico 8,298,000; Arizona 24,930,000. Total of 3,123,000 sterile flies released within Barrier of Mexico. (Vet. Serv.).

WEEDS

HEMP BROOMRAPE (*Orobancha ramosa*) - CALIFORNIA - New infestation in San Benito County in 50-acre field but within eradication zone and 2 miles from a previous find. Tomatoes harvested and field cultivated. (CA Pest Rpt.).

HAWAII PEST REPORT

New Records - Adult of a SPHINGID MOTH (*Macroglossum pyrrhostictum* (Butler)) was collected at large at Makiki, Oahu, by R. Rice, July 11, 1976. Determined by J.C.E. Riotte; confirmed by R.W. Hodges. This is a new United States record not known to occur in the continental U.S. Known on *Paederia foetida* and *P. scandens* (fevervines) from the east Himalayas to China, Japan, and Malaya. Eight other adults collected or observed at Kahaluu, Moanalua Valley, Makiki, Manoa, and Wilhelmina Rise, Oahu. Adults active at dawn and dusk feeding on *Impatiens* sp. flowers. Three larvae of probably this moth being reared on *P. foetida*. One adult collected at light in residence at Hilo, Hawaii Island, by L. Shimoda, October 14. Determined by S. Matayoshi. This is a new island record. Single adults recovered in recent weeks from light traps at Hickam Air Force Base and Honolulu Harbor on Oahu. (Chun, L. Nakahara).

All stages of a WHITEFLY (*Odontaleyrodes rhododendri*) collected from azalea plant at Hilo, Hawaii Island, by R. Mau, August 22, 1976. Determined by M.B. Stoetzel. Collected from azalea hedge planting at Manoa, Oahu, by S. Matayoshi and L. Nakahara, September 8. Determined by J. Beardsley. This is a new island record. Damage to leaves light to practically nil. (Beardsley et al.). Nymphs currently noted on azalea plantings at Makiki and Moana lua, indicating wide establishment on Oahu. (Chun, L. Nakahara).

All stages of a WHITEFLY (*Paraleyrodes naranjae*) collected on *Citrus limon* (lemon) at Moanalua, Oahu, by G. Taniguchi and J. Beardsley, September 30, 1976. Determined by M.B. Stoetzel. This is a new State record. Light on 4 lemon trees, one lime tree, and one orange tree of total of 47 citrus trees in one-square-block area there and on single lemon trees at McCully and Hawaii Kai, Oahu. *Encarsia variegata* (a eulophid wasp) recovered from infested material from Moanalua. (Chun et al.).

General Vegetables - LEAFMINER FLIES (*Liriomyza* spp.) infestations and damage generally moderate to heavy on various crops in Waianae District, Oahu. Infestations heavy (80 percent of leaves heavily mined) in acre of cucumbers and 2 acres of tomatoes in Lualualei Valley, Mikilua, and moderate to heavy (25-60 percent of leaves; 5-20+ mines per leaf) on 15 acres of green onions at Mikilua and in Waianae Valley, Oahu. Moderate on 0.5 acre of bush beans (25 percent of leaves heavily mined) in Waianae Valley and on 4 acres of

mustard cabbage (30-50 percent of leaves, 20-200 mines per leaf in Lualualei Valley at Lualualei. Moderate infestations of BEET ARMYWORM (Spodoptera frugiperda and LEAFMINER FLIES (Liriomyza spp.) on 4 acres of green onions at Waianae Valley caused 75-80 percent of leaves to be unmarketable. CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavy on 2 acres of tomatoes at Mikilua. (L. Nakahara, October 2-8).

Fruits and Nuts - Light infestations of a SOFT SCALE (Coccus capparidis) occurred on single citrus tree at Kaumakani, Kauai, September 16, 1976. Collected by L. Nakahara and D. Sugawa. Determined by J. Beardsley. This is a new host and island record. (L. Nakahara).

Ornamentals - ORANGE SPINY WHITEFLY (Aleurocanthus spiniferus) infested citrus tree at Waianae. Now known to occur along entire southern half of Oahu. AZALEA LACE BUG (Stephanitis pyrioides) heavy on azalea in various backyard plantings at Manoa. Constant nymphal and adult feeding caused some plants and hedges to appear entirely chlorotic. (L. Nakahara). AN ARMORED SCALE (Parlatoria proteus) infestations moderate to heavy (50 percent of leaves, several hundred per leaf) on 450 square feet of hybrid Vanda sp. at Kohala, Hawaii Island, week ending October 8. (Mau).

DETECTION

NEW UNITED STATES RECORDS

INSECTS

A DELPHACID PLANTHOPPER (Delphacodes nigrifacies Muir) - FLORIDA - Collected from Paspalum notatum (Bahia grass) at Belle Glade, Palm Beach County, June 27, 1966, by W.G. Genung. Determined by J.P. Kramer. Species previously known only from Martinique, Puerto Rico, Guyana, and Costa Rica. First continental record. (FL Coop. Sur.).

A SPHINGID MOTH (Macroglossum pyrrhostictum) - HAWAII - Oahu Island. (p. 764).

NEW STATE RECORDS

INSECTS

AN ARMORED SCALE (Aonidomytilus hyperici) - ALABAMA - Barbour County. (p. 762).

A SCOLYTID BEETLE (Xylosandrus compactus) - ALABAMA - Mobile County. (p. 761).

A WHITEFLY (Odontaleyrodes rhododendri) - HAWAII - Hawaii Island. (p. 764).

A WHITEFLY (Paraleyrodes naranjæ) - HAWAII - Oahu Island. (p. 764).

NEW COUNTY AND ISLAND RECORDS

INSECTS

AN ARMORED SCALE (Aonidomytilus solidaginis) - ALABAMA - Barbour (p. 760).

CAMELLIA SCALE (Lepidosaphes camelliae) - ALABAMA - Pickens (p. 760).

A DELPHACID PLANTHOPPER (Delphacodes nigrifacies) - FLORIDA - Males collected in blacklight trap at Gainesville, Alachua County, September 24-26 and 29, 1976, by F.W. Mead. Determined by J.P. Kramer. (FL Coop. Sur.).

EUONYMUS SCALE (Unaspis euonymi) - ALABAMA - Pickens (p. 760).

FERN SCALE (Pinnaspis aspidistrae) - ALABAMA - Perry (p. 760).

A PUNCTUREVINE SEED WEEVIL (Microlarinus lareynii) - OKLAHOMA - Blaine (p. 762).

A SOFT SCALE (Coccus capparidis) - HAWAII - Kauai (p. 765).

SOUTHERN CHINCH BUG (Blissus insularis) - CALIFORNIA - Imperial (p. 757).

A SPHINGID MOTH (Macroglossum pyrrhasticum) - HAWAII - Hawaii Island (p. 764).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - ILLINOIS - Coles (p. 756).

A WHITEFLY (Odontaleyrodes rhododendri) - HAWAII - Oahu (p. 764).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville, 10/8-14, 2BL - GRANULATE CUTWORM (Feltia subterranea) 6, TOBACCO BUDWORM (Heliothis virescens) 1, CORN EARWORM (Heliothis zea) 2, BEET ARMYWORM (Spodoptera exigua) 6, FALL ARMYWORM (Spodoptera frugiperda) 4. KANSAS - Scandia, 10/11, BL - BLACK CUTWORM (Agrotis ipsilon) 4, SALTMARSH CATERPILLAR (Estigmene acrea) 6, WHEAT HEAD ARMYWORM (Faronta diffusa) 2, corn earworm 8, EUROPEAN CORN BORER (Ostrinia nubilalis) 2, VARIEGATED CUTWORM (Peridroma saucia) 5, fall armyworm 11. Sublette, 10/4-10, I - ARMY CUTWORM (Euxoa auxiliaris) 12, corn earworm 116, European corn borer 4, variegated cutworm 32. MISSISSIPPI - Stoneville, 10/8-14, 41.84 degrees F. precip. 0.07 in., 2BL - Black cutworm 8, granulate cutworm 24, tobacco budworm 20, corn earworm 44, variegated cutworm 5, ARMYWORM (Pseudaletia unipuncta) 59, beet armyworm 966, fall armyworm 39, YELLOWSTRIPED ARMYWORM (Spodoptera ornithogalli) 1, CABBAGE LOOPER (Trichoplusia ni) 276.

Additional Data on Holly Leafminer Adults
(Diptera, Agromyzidae: Phytomyza ilicis-ilicicola group)

George C. Steyskal 1/

ABSTRACT. Additional diagnostic data and figures, supplementary to those presented by Kulp in his revision of the ilicis-ilicicola group in 1968, are given for Phytomyza ditmani Kulp, P. glabricola Kulp, P. ilicicola Loew, P. opacae Kulp, P. verticillatae Kulp, and P. vomitoriae Kulp.

In his revision of the holly leafminers in 1968, Kulp recognized 7 morphologically very similar species of Phytomyza, of which 5 were described as new species. These species and their hosts are as follows:

Phytomyza ditmani Kulp. Hosts: Ilex decidua Walt., I. serrata Thunb.

P. glabricola Kulp. Host: Ilex glabra (L.) Gray.

P. ilicicola Loew. Host: Ilex aquifolium L., I. cumulicola Small, I. opaca Ait.

P. ilicis Curtis. Host: Ilex aquifolium L.

P. opacae Kulp. Hosts: Ilex aquifolium L., I. cumulicola Small, I. opaca Ait.

P. verticillatae Kulp. Host: Ilex verticillata (L.) Gray.

P. vomitoriae Kulp. Host: Ilex vomitoria Ait.

Although Kulp described his new species and 2 previously described species in detail and included many drawings of the genitalia of both sexes, he neither illustrated the ovipositor of P. ilicicola or the aedeagus and ovipositor of P. ditmani, P. opacae, and P. vomitoriae; nor described the configuration of these highly diagnostic parts in his text.

Spencer (1973) provided figures of the aedeagus of 4 species and I am here adding figures of the mentioned parts for the other species. I am also adding new figures to replace Kulp's figure of the cercus of the female of P. glabricola (Fig. 9) and Kulp's and Spencer's drawings of the posterior view of the aedeagus of P. verticillatae (Fig. 4), which I believe are inaccurate. I drew my figures from paratypes (except for P. ilicicola) mounted on slides by Kulp and now preserved in the U.S. National Museum collections. Kulp's drawing of the female cercus of P. glabricola shows 3 apical setae, and his description states that "3 tactile setae" are present. But my comparison of several slides shows that this species is distinguished from other species by regularly having only 2 stout, rather bluntly pointed setae at the apex of the cercus along with several much more slender setae, 4 of which are longer than the stout pair (Fig. 9).

The shape of the apical processes of the aedeagus may vary considerably, especially in lateral view, depending on the amount of twisting they undergo in preparation. When unconstrained, all are more or less S-shaped. Other specific characters are the absolute

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length and the ratio of length to breadth of the ovipositors. Colorless and lightly sclerotized parts in certain mounting media may be difficult to see, although their shapes are often characteristic.

Literature Cited

- Kulp, L.A. 1968. The taxonomic status of dipterous holly leaf miners (Diptera: Agromyzidae). Univ. Maryland Agric. Exp. Stn. Bull. A-155. 42 p.
- Spencer, K.A. 1973. Agromyzidae (Diptera) of economic importance. Dr. W. Junk B.V., The Hague. xi, 418 p.

See illustrations on next two pages.

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1(42):767-770, 1976

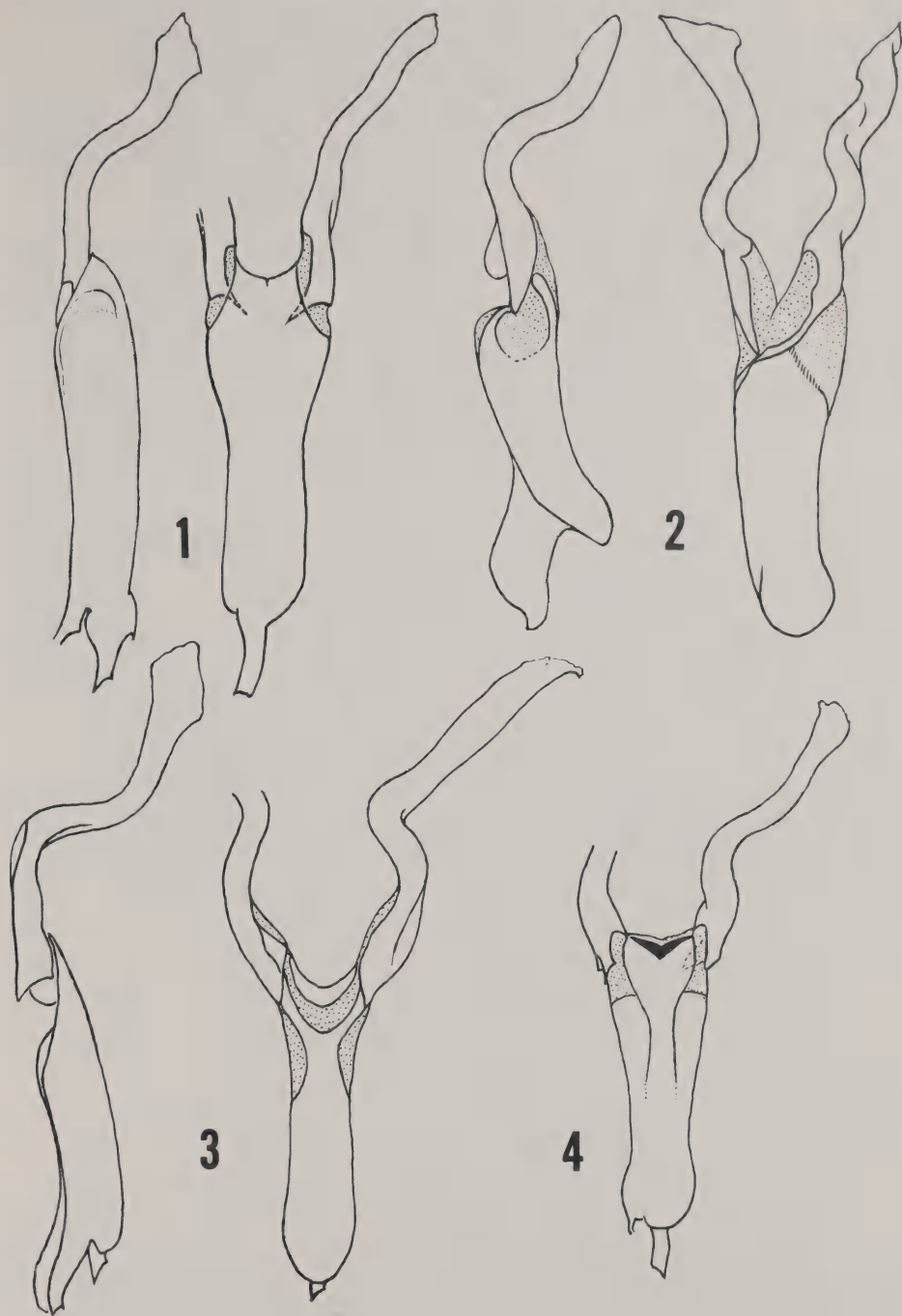


Fig. 1-4. *Phytomyza* species, apical part of aedeagus in lateral and posterior views. 1. *P. opacae* Kulp; 2. *P. vomitoriae* Kulp; 3. *P. ditmani* Kulp; 4. *P. verticillatae* Kulp (posterior view only).

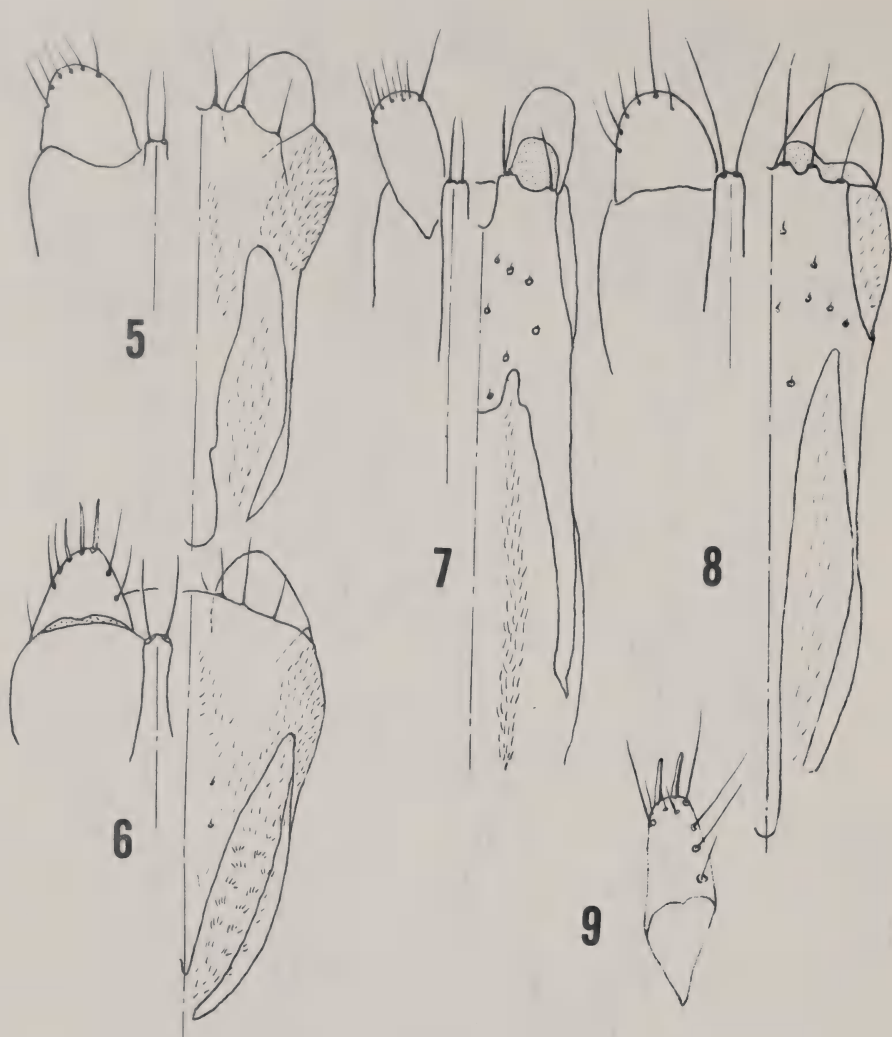


Fig. 5-9. *Phytomyza* species, ovipositor, including cerci; apical part of dorsal half and complete ventral half (less setae of cercus), respectively. 5. *P. opacae* Kulp; 6. *P. ditmani* Kulp; 7. *P. vomitoriae* Kulp; 8. *P. illicicola* Loew, College Park, Maryland; 9. *P. glabricola* Kulp (cercus only, ventral view).

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1975
(Continued from page 745)

FOREST INSECT AND DISEASE HIGHLIGHTS 1/

Eastern Conditions

Insects

SPRUCE BUDWORM (Choristoneura fumiferana), GYPSY MOTH (Lymantria dispar), FALL CANCKERWORM (Alsophila pometaria), and SOUTHERN PINE BEETLE (Dendroctonus frontalis) continue to top the list of insect pests in the Eastern United States. Defoliation of more than 5 million acres by the spruce budworm prompted a 2.2 million acre aerial chemical control project in MAINE in 1975. Acreage defoliated by gypsy moth dropped off sharply, especially in New England and NEW YORK. The 91,000 acres defoliated there represents approximately 60 percent of the 1974 defoliation. Fall cankerworm outbreaks occurred throughout the Northeast, especially in PENNSYLVANIA, NEW YORK, and WISCONSIN, where over 750,000 acres were defoliated.

Southern pine beetle continued as the most serious pest in the South. The insect has expanded from 11 to 13 States, causing moderate to severe damage in KENTUCKY and OKLAHOMA for the first time. This outbreak currently exceeds 46 million acres.

In the Lake States, defoliation of jack pine by the JACK PINE BUDWORM (Choristoneura pinus) dropped off sharply with MICHIGAN reporting only 35,000 acres of light to moderate defoliation.

Overall, FOREST TENT CATERPILLAR (Malacosoma disstria) activity in the South decreased, whereas, in the Lake States population appeared to be on the increase. Two counties in Virginia had increased defoliation on 25,000 acres and partial to severe defoliation was reported on approximately 200,000 acres in LOUISIANA and 75,000 acres in ALABAMA. In MICHIGAN, over 200,000 acres of oak and aspen were defoliated.

Other insects of note in the East were the oak leafroller, oak sawfly, BALSAM WOOLLY APHID (Adelges piceae), hemlock woolly aphid, ips engraver beetle, and the BLACK TURPENTINE BEETLE (Dendroctonus terebrans).

1/ The following summary is the highlights section from the "Forest Insect and Disease Conditions in the United States - 1975" which was compiled and published by the Forest Service, U.S. Department of Agriculture. Copies of the complete annual summary are available upon request from the Regional Forester or Area Director in your area. Addresses of the regional offices may be found on pages 774 and 775 in this issue of the CPPR.

Diseases

Root rots, foliage diseases and fusiform rusts continued to cause severe damage in conifer and hardwood nurseries. CYLINDROCLADIUM BLIGHT (Cylindrocladium scoparium) was also recently reported in PUERTO RICO.

Other diseases of concern include OAK WILT VIRUS, ANNOSUS BUTT AND ROOT ROT (Fomes annosus), and COMANDRAE BLISTER RUST (Cronartium comandrae). In general, oak wilt virus was static to slightly higher. The Huron-Manistee National Forest reported oak wilt virus for the first time in the central part of the Lower Peninsula of MICHIGAN, and losses seem to be intensifying in several State parks.

DUTCH ELM DISEASE (Ceratocystis ulmi) incidence is increasing, especially in the Lake States. Predictions for 1976 are for heavy mortality in the northern section of MINNESOTA, WISCONSIN, and MICHIGAN.

Comandrae blister rust continues to cause mortality to young loblolly plantations on and near the Cumberland Plateau in eastern TENNESSEE, and to young shortleaf plantations and natural stands in northern ARKANSAS.

LAGERBERGII CANKER (Scleroderris lagerbergii) is causing severe damage and mortality in 60 to 80-foot-high trees in NEW YORK. This disease previously has been considered to be a serious problem in nurseries and young plantations. In New York, the pattern of damage closely resembles the situation in Europe.

Western Conditions

Insects

WESTERN SPRUCE BUDWORM (Choristoneura occidentalis) and several species of BARK BEETLES were the major insect pests in the western forests of the contiguous United States. In ALASKA, the SPEAR-MARKED BLACK MOTH (Rheumaptera hastata) remained the major insect pest.

Western spruce budworm defoliated approximately 5 million acres in MONTANA, IDAHO, and WYOMING. Visible defoliation extended over 3.9 million acres of the northern region, exclusive of the Nezperce National Forest, Idaho. Budworm infestations also intensified in Douglas-fir and true fir stands on portions of the Okanogan and Wenatchee National Forests and the North Cascades National Park in north-central WASHINGTON with the area of severe defoliation exceeding 500,000 acres. In OREGON, scattered light to moderate defoliation, totaling 8,400 acres occurred on the Wallowa-Whitman National Forest in northeastern Oregon and on 10,560 acres on the Warm Springs Reservation. Populations are beginning to build in ARIZONA and NEW MEXICO.

The MODOC BUDWORM (Choristoneura viridis) infestation in CALIFORNIA, first reported in 1973, declined in 1975. Several other insect pests, however, have enlarged or intensified their infestations. The WHITE FIR NEEDLEMINER (Epinotia meritana) severely defoliated trees around Manzanita Mountain in Modoc County.

Jeffrey pine needle miner also enlarged its area of activity in the San Bernardino Mountains of southern CALIFORNIA.

The 1974 DOUGLAS-FIR TUSsock Moth (Orgyia pseudotsugata) epidemic in northern IDAHO collapsed by the end of the season as the result of spraying with a chlorinated hydrocarbon, parasitism, predation, and disease. Tussock moth infestations, however, caused light to heavy defoliation on the Tonto National Forest, ARIZONA, and Cibola and Lincoln National Forests in NEW MEXICO. No tussock moth defoliation was observed in either WASHINGTON or OREGON.

In the interior of ALASKA, the EASTERN LARCH BEETLE (Dendroctonus simplex) continued to cause scattered tamarack mortality on 350,000 acres, and for the second year, the spearmarked black moth continued to defoliate over 2.5 million acres of paper birch. WESTERN BLACKHEADED BUDWORM (Accleris gloverana) has decreased markedly to approximately half that found in 1974.

LARCH CASEBEARER (Coleophora laricella) defoliation is heavy on about 25,000 acres in northern IDAHO.

MOUNTAIN PINE BEETLE (Dendroctonus ponderosae) in many forested areas continued to cause heavy damage to stands of lodgepole pine and ponderosa pine, and in localized areas to western white pine throughout many areas of the West. This beetle was epidemic in lodgepole pine stands in the Lolo, Kootenai, Beaverhead, and Gallatin Forests in MONTANA. They are expected to intensify in 1976. Severe infestations were also detected in Glacier National Park in Montana and Yellowstone National Park in WYOMING. Populations on the Targhee and Ashley in IDAHO generally declined.

The heavy outbreak of mountain pine beetle continued in ponderosa pine stands along the Front Range of COLORADO (approximately one million trees attacked), in the Black Hills of SOUTH DAKOTA (850,000 trees), and in Wyoming (6,000 trees infested). Heavy infestations also caused severe lodgepole pine mortality on 920,000 acres on the Umatilla, Wallowa-Whitman, and Malheur Forests in OREGON. On the Kaibab Plateau in ARIZONA, the mountain pine beetle infestation continues to increase on about 8,000 acres.

FIR ENGRAVER (Scolytus ventralis) damage more than doubled in WASHINGTON and increased nearly fivefold in OREGON. Heavy fir engraver damage was also detected over most of northern IDAHO and western MONTANA where over 1,630 grand fir were killed. An estimated 10,000 additional grand fir trees were killed along the St. Maries and North Fork Rivers.

Spruce bark beetle infestations are high on the west side of Cook Inlet, ALASKA, in an area covering 167,000 acres. Generally, in most other areas the infestations appear to be declining.

DOUGLAS-FIR BEETLE (Dendroctonus pseudosugae) infestations decreased noticeably in IDAHO, MONTANA, COLORADO, and CALIFORNIA, but are increasing in WASHINGTON and OREGON with some indication of increased activity in the Douglas-fir tussock moth areas.

Diseases

The incidence of foliage disease and weather injuries continued to cause damage in both forest nurseries and forest stands in WASHINGTON. Root rots, heart rots, and dwarfmistletoes remained the most important diseases in the Pacific Northwest.

Dwarfmistletoes continued as the most destructive disease agents in the Rocky Mountain area of the West. In COLORADO and WYOMING, approximately 50 percent of the commercial lodgepole pine forest is infected with LODGEPOLE PINE DWARFMISTLETOE (Arcenthobium americanum).

In WYOMING, 250,000 acres of commercial forest lands are being heavily damaged by COMANDRAE BLISTER RUST. Severe aspen decline and mortality were also reported in the central Rocky Mountain region in many recreational sites with much of the decline being due to camper abuse.

Four million Douglas-fir seedlings were killed by a foliar disease (Phoma sp.) in the Humboldt Nursery, CALIFORNIA. In WASHINGTON and OREGON, mortality of Douglas-fir seedlings was found to be caused by several species of Phytophthora in forest nurseries.

Smog damage to pines continued to increase in southern CALIFORNIA and in the Sierra Nevada forests. Acute sulfur dioxide injury to forest vegetation from copper smelter emissions was observed on the Apache-Sitgreaves and Tonto National Forests in ARIZONA. Acute sulfur dioxide injury was limited to tip burn on conifers and interveinal bleaching and/or browning on broadleaf plants. Chloride toxicity continued to affect roadside trees in the Cibola and Sante Fe Forests in NEW MEXICO. Evaluations are underway to accumulate baseline information in the vicinity of several coal burning power plants currently under construction in eastern MONTANA.

REGIONAL AND AREA OFFICE ADDRESSES

U.S. FOREST SERVICE

<u>Region</u>		<u>Region</u>	
1	U.S. Forest Service Federal Building Missoula, MT 59801	3	U.S. Forest Service Federal Building 517 Gold Avenue, SW Albuquerque, MN 87101
2	U.S. Forest Service Denver Federal Center Building 85 Denver, CO 80225	4	U.S. Forest Service Federal Office Building 324 - 25th Street Ogden, UT 84401

REGIONAL AND AREA OFFICE ADDRESSES
(Continued)

<u>Region</u>	<u>Area</u>
5 U.S. Forest Service 630 Sansome Street San Francisco, CA 94111	NA Northeastern Area U.S. Forest Service 6816 Market Street Upper Darby, PA 19082
6 U.S. Forest Service P.O. Box 3623 Portland, OR 97208	SA Southeastern Area U.S. Forest Service 1720 Peachtree Road, NW Atlanta, GA 30309
10 U.S. Forest Service Federal Office Building P.O. Box 1628 Juneau, AK 99801	

FOREST AND SHADE TREES

Highlights

Two new infestations of EUROPEAN PINE SHOOT MOTH were detected in Oregon. NANTUCKET PINE TIP MOTH was heavy for the fourth consecutive year in Maryland. PALES WEEVIL and NORTHERN PINE WEEVIL continued their 3-year increase in Ohio. PINE ROOT COLLAR WEEVIL continued as the most serious coniferous plantation insect in Michigan. WHITE PINE WEEVIL infested thousands of acres of white pine and Norway spruce in Vermont, was extensively damaging in New Hampshire, and was very heavy and increased in southern Maine. A new host record was noted in Florida for a SAWFLY. PINE SPITTLEBUG was the heaviest in over 12 years in Maine. BALSAM WOOLLY APHID extended its range in Washington.

In Maine, FALL WEBWORM populations were heavier than in 1974 with heavy webbing. GEOMETRID MOTHS of various species severely defoliated oak in Wisconsin. ARBORVITAE LEAFMINER caused serious defoliation in Michigan. MAPLE LEAFCUTTER defoliation of sugar maple in Vermont dramatically increased. SADDLED PROMINENT outbreak in Maine was worse than predicted. Treatments had to be applied to prevent further oak mortality caused by a TORTRICID MOTH in Pennsylvania. Surveys for SMALLER EUROPEAN ELM BARK BEETLE showed a general distribution throughout central and eastern Oregon and its presence in North Dakota. Spread of DUTCH ELM DISEASE by this beetle continued unchecked in Arkansas. BRONZE BIRCH BORER was widespread and heavy and extended its range in Oregon. Damage by TWOLINED CHESTNUT BORER is growing worse in Michigan. LOCUST LEAFMINER was severe on locust trees in Kentucky and the worst in 4 years in Maryland. ELM LEAF BEETLE damage in Nevada was unusually severe. Damage to many shade trees spread in New Mexico and was serious in several other States. LARCH SAWFLY populations increased in Maine. The BEECH SCALE and BEECH BARK CANCKER complex was the number one beech tree killer in Vermont.

Two new infestations of EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) were detected in northwestern OREGON during a survey with pheromone traps at a nursery in Clackamas County and near Woodburn, Marion County. Larvae were recovered from the nursery and all pines embargoed until the pest is eradicated. Delimiting surveys in a 2-mile radius around the infested nursery were negative. About 3,000 residential pines in Hermiston, Umatilla, Hat Rock, McNary Dam and Manor, and Pendleton, Umatilla County, were sprayed 4 times to suppress escalating populations. Controls were excellent.

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) was very light to heavy in MISSOURI. A heavy third generation browned the tips of lateral and terminal growth on shortleaf and Scotch pines. Heavy populations for the fourth consecutive year in MARYLAND injured 40-80 percent of the tips statewide. Loblolly, Virginia, mugho, black, and several other ornamental pine species were infested. Poor detection and untimely treatments were responsible for heavy damage.

ARBORVITAE LEAFMINER (Argyresthia thuiella) caused serious defoliation throughout the northwest Lower Peninsula of MICHIGAN and less in the eastern portion. Some mortality to trees on poorer sites is anticipated but large areas of mortality appears unlikely. Another 1-2 years of heavy populations are expected before a collapse occurs.

The most serious coniferous insect problem in MICHIGAN plantations continued to be PINE ROOT COLLAR WEEVIL (Hylobius radicis). Extensive regions of unmaintained Scotch, Austrian, and red pine showed damage symptoms in the western and northern Lower Peninsula. Because no adequate management practices can be used over this large area, this pest will probably continue to be severe during the next several years.

Heavy overwintering populations of PALES WEEVIL (Hylobius pales) and NORTHERN PINE WEEVIL (Pissodes approximatus) in OHIO indicated a continuation of population buildup during the last 3 years. Adults were active by the first week of April, feeding heavily on white and Scotch pine seedlings and twigs of mature trees in the northeastern areas. Larvae began pupating by June 19 and new adults were observed feeding by July 8. Adults continued to emerge throughout July in heavy numbers, up to 30 adults emerging from a single 3-inch diameter stump.

Activity of WHITE PINE WEEVIL (Pissodes strobi) in VERMONT remained heavy, affecting thousands of acres of white pine and Norway spruce in forests and plantations. It was also a problem on ornamental pine and spruce. Heavy adult activity throughout NEW HAMPSHIRE caused extensive damage to terminal buds wherever examined. Populations in MAINE were still very heavy generally and even increased in some southern portions. Damaged plantation pine trees were common.

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) infested short-leaf pines in southern MISSOURI. Trees struck by lightning attracted the beetles in several cases. Infestations were at normal levels. Heavy numbers after a November hurricane damaged pines in the panhandle of FLORIDA, including Okaloosa, Walton, Holmes, and Washington Counties. Slash, longleaf, loblolly, spruce, and sand were the pine species affected.

In FLORIDA last instar larvae of a SAWFLY (Neodiprion warreni) were discovered on March 6, 1975, heavily infesting about 40 acres out of 100 acres of "Choctawhatchee" race of sand pine (Pinus clausa) at Eglin Air Force Base, Walton County. This was a new host record for this sawfly.

In MAINE the conspicuous spittle masses formed by nymphs of PINE SPITTLEBUG (Aphrophora parallela) on various pines were evident nearly everywhere with reports of some damage, especially to Scotch pine Christmas trees. Populations of this species were the heaviest in 1975 that they have been in over 10 years.

EASTERN SPRUCE GALL APHID (Adelges abietis) emerged in RHODE ISLAND from galls on August 18. Populations were especially heavy on white spruce statewide in 1975.

BALSAM WOOLLY APHID (Adelges piceae) caused a new WASHINGTON center of damage in subalpine fir on the Mt. Baker and Snoqualmie National Forest near Concrete, Skagit County. This extends its range beyond the previous northern limit of the Snoqualmie River.

Second generation of FALL WEBWORM (Hyphantria cunea) was unusually light in KANSAS in 1975. Infestations were light to moderate in MISSOURI and heavy in several locations in the southwest area. Defoliation and heavy webbing occurred on walnut, persimmon, hickory, and sycamore. Many early webs were visible in RHODE ISLAND on roadside trees by July 25. By August 8, most larvae were 0.75-1 inch long and most webs 2-3 feet long. Webs caused widespread comments in southern and south-central MAINE where heavier populations than in 1974 were easily visible on roadsides and hedgerow trees. Peak levels have been present for the last 3 years. Increased parasitism and disease are expected to reduce populations.

In late May, larvae of some GEOMETRID MOTHS in WISCONSIN defoliated oaks in parts of Columbia, Juneau, and Adams Counties. The species involved were SPRING CANKERWORM (Paleacrita vernata), FALL CANKERWORM (Alsophila pometaria), and LINDEN LOOPER (Erannis tiliaria). An aerial survey on June 18 revealed severe defoliation of oak in portions of western Columbia, northeastern Sauk, southwestern Marquette, southern Adams, and southern Juneau Counties. Less defoliation occurred over an extensive area including Dunn, Chippewa, Eau Claire, and Monroe Counties. By mid-June the defoliation had ceased. The majority of the trees recovered as expected by early July.

SPRING CANKERWORM (Paleacrita vernata) infestations on elms and hackberrys in southern SOUTH DAKOTA caused extensive defoliation and some tree mortality.

MAPLE LEAFCUTTER (Paraclemensia acerifoliella) defoliation seemed to sharply increase on sugar maples in VERMONT. Some stands were defoliated 4 consecutive years. If increase continues, controls will be required. Sugar maple trees throughout southwestern NEW HAMPSHIRE were heavily defoliated. Infestations have been severe for the past 3 years.

EASTERN TENT CATERPILLAR (Malacosoma americanum) webs were first noted in MISSISSIPPI on wild cherry and plum in Covington, Jones, Lamar, and Rankin Counties the week ending March 21. By April 1, webs occurred statewide. This species was active in KENTUCKY defoliating wild cherry. Egg hatch occurred in the south-central area in early March. Decrease continued this season. The average infestation for 1972 to 1975 was 16.8, 10.2, 7.0, and 3.34 webs per mile driven. First egg hatch in 1975 was in Providence County, RHODE ISLAND, on May 9. This was the fifth consecutive season with heavy populations.

The outbreak of SADDLED PROMINENT (Heterocampa guttivitta) and other species in MAINE, as indicated by widespread reports and light collections of the group in 1974, was much heavier than expected in 1975. Defoliation was greatest in eastern and east-central areas where about 25,000 acres of moderate to heavy defoliation were mapped. No spraying was done. There was some evidence of disease and starvation in the areas hardest hit, but for the most part, the insect population was still healthy and expected to increase again in 1976.

A TORTRICID MOTH (Archips semiferanus) in PENNSYLVANIA made treatment necessary to prevent further oak mortality on 36,334 acres, mostly on State forest lands, in Clearfield, Elm, and Cameron Counties. The spray project began on May 28 and ended on June 8 with excellent results. Defoliation in untreated areas amounted to fewer than 2,000 acres. Oak mortality appraisal conducted in 2 of the 3 counties most affected on 189,000 acres found 108,859,000 board feet of sawtimber and 47,183,500 cubic feet of pulpwood affected. The total value of wood destroyed was \$3,220,849.

A TORTRICID MOTH (Archips negundanus) stripped foliage from several thousand boxelder trees during spring around communities and particularly in the lower parts of northern and central UTAH canyons.

A TORTRICID MOTH (Sparganothis pettitana) caused moderate damage to some sugar maples in northern VERMONT for the first record of this insect causing noticeable damage.

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*), the principal vector of DUTCH ELM DISEASE (*Ceratocystis ulmi*), was generally distributed throughout central and eastern OREGON. Use of multilure traps resulted in the detection of 12 new counties east of the Cascade Mountains. Counties where beetles were found for the first time include Sherman, Gilliam, Morrow, Union, Wallowa, Baker, Grant, Wheeler, Jefferson, Crook, Deschutes, and Harney. Beetles were also found west of the mountains at Portland, Multnomah County. Trappings of *S. multistriatus* throughout Portland suggests that it has been established on the west side for some time and may have a wide distribution in the Willamette Valley. Two adult generations are indicated for north, central, and eastern areas with flight activity extending from mid-May through October.

Adults were collected in NORTH DAKOTA for a new State record. Smaller European elm bark beetle adults were collected in Cass County by June 27 and Burleigh and Morton Counties by September 5. This species continued to spread DUTCH ELM DISEASE to elm trees all over ARKANSAS. Control measures were ineffective and few, if any, controls are now applied.

BRONZE BIRCH BORER (*Agrilus anxius*) damage to ornamental cutleaf birch was widespread in northeastern OREGON and particularly heavy in the small communities of Enterprise, Wallowa County, and Elgin, Union County, which were new distributional records. In Deschutes and Wheeler Counties new records of infestation were detected in *Betula occidentalis* (water birch). *A. anxius* continued a steady kill of birch in Spokane County, WASHINGTON. This species and TWOLINED CHESTNUT BORER (*A. bilineatus*) continued as the most serious and difficult pests to control on young shade trees in MICHIGAN. Damage and new infestations continued to increase, suggesting a major problem in 1976.

LOCUST LEAFMINER (*Odontota dorsalis*) larval damage began to appear on locust trees in KENTUCKY in early June. Damage to trees continued to increase until mid-July when about 70 percent of locust trees in the central areas was 80-95 percent defoliated. Severe damage to black locust in MARYLAND in Montgomery, Prince Georges, Anne Arundel, Charles, and St. Marys Counties was the worst in 4 years.

ELM LEAF BEETLE (*Pyrrhalta luteola*) infestations and damage to elms in NEVADA were above normal in several areas as in 1974. Damage was unusually severe, especially to American and English elms in Carson City and southern Washoe County where large numbers of trees appeared to be in fall foliage by mid-July. Many shade trees in NEW MEXICO were completely defoliated in Valencia and Bernalillo Counties during July. Damage was heavy in Quay County but light elsewhere. Much spread took place in Dona Ana County, 10 miles from previously known infestations; infestations began on June 24. Damage noted in southern Catron County was unusual. Adults were active on elm trees in OKLAHOMA in some areas by early April. Egg laying began in early May. Heavy infestations were found in a few areas in May and in many areas during July and August. This species continued to be a major pest of elm trees in ARKANSAS. Extent of control is very minor. Damage makes trees more vulnerable to DUTCH ELM DISEASE. ELM LEAF BEETLE in

KANSAS was a problem statewide on Siberian elms. The first generation was slightly heavier than usual, but the second generation caused less than normal damage over most areas. Elm leaf beetle continued to defoliate and seriously damage elms on lawn and street plantings from central to northern ALABAMA. Defoliation to elms was heavy in hardwood stands and roadside trees over much of VERMONT in the Champlain Valley.

ASIATIC OAK WEEVIL (Cyrtopistomus castaneus) was widespread and very abundant on oaks in MISSOURI in 1975. Defoliation was heavy in many areas.

First-generation larvae of BIRCH LEAFMINER (Fenusa pusilla) mined leaves of WISCONSIN birch trees in Dane, Marathon, Marinette, and Langlade Counties during late May and early June. By June 20, the first generation had pupated in most areas. Damage was most noticeable in Lincoln, Langlade, Marathon, Menominee, Oneida, and Vilas Counties. Second-generation adults were observed in Jefferson County on June 24 and in Langlade County on July 1, and larvae were seen in Dodge County on July 14. Damage from second-generation larvae was most noticeable on trees seriously affected by first-generation larvae.

LARCH SAWFLY (Pristiphora erichsonii) populations on larch generally increased in MAINE in 1975 after several light years. The heaviest damage occurred in southern portions of Washington and Hancock Counties where heavy to severe defoliation occurred. Heavy sawfly populations are predicted for 1976. A survey to determine the parasitism level from native and introduced parasites has not been completed. An increase in EASTERN LARCH BEETLE (Dendroctonus simplex) follows heavy larch sawfly feeding.

Larvae of SAWFLIES (Caliroa spp.) defoliated oaks in the central and eastern areas of KENTUCKY. The heaviest damage occurred in the southeastern areas where 584,000 acres showed light to moderate defoliation, 504,000 acres showed heavy defoliation and 48,500 acres showed very heavy defoliation. Damage from these pests was heavier in 1975 than in 1974.

ASH PLANT BUG (Tropidosteptes amoenus) was moderate to heavy in NORTH DAKOTA on green ash in Cass County the first week in June. By June 13, three nymphs per leaf occurred on green ash in Bowman County.

WALKINGSTICK (Diapheromera femorata) was heavy in 3 counties in central MISSOURI and one county in the south-central area. Defoliation of hardwoods, mainly oak, was common. Infestations in WISCONSIN were severe on about 20 acres in northern Adams and southern Wood Counties on August 6. Oak defoliation was seen in southwestern Marinette County in mid-August. Defoliation ranged moderate to complete on 400-500 acres in the Eau Claire County Forest by September 3. Elsewhere, only scattered southern slopes were noticeably defoliated.

BEECH SCALE (Cryptococcus fagi) and BEECH BARK CANCKER (Nectria coccinea var. faginata) complex caused heavy beech mortality in VERMONT. This complex was the number one tree killer with annual loss of over 2,000,000 board feet.

Highlights:

The number of SCREWORM cases in 1975 increased 142 percent. Aedes aegypti and GULF COAST TICK were found in Arkansas for the first time in 10 or more years. Encephalomyelitis and other mosquito-borne diseases caused concern in Minnesota, Michigan, Tennessee, and Alabama. FACE FLY extended its range in Oklahoma, Arkansas, and Mississippi; controls were ineffective or difficult in Alabama and Tennessee. A STABLE FLY outbreak occurred on the gulf coast of Florida in the fall.

During 1975, there were 17,562 confirmed cases of SCREWORM (Cochliomyia hominivorax) reported from the continental United States from January 1 through December 27 as follows: Oklahoma 14; Texas 16,723; New Mexico 266; Arizona 557; and California 2. The total number of cases reported in 1975 was more than double the cumulative total of 7,267 cases reported in 1974 and represents an increase of 142 percent. Sterile screwworm releases in the U.S. in 1975 totaled more than 5.7 billion as follows: Louisiana 360 thousand, Oklahoma 1.5 million, Texas 5.1 billion, New Mexico 108.8 million, Arizona 505.8 million, and California 2 million.

MOSQUITOES were generally heavier in many areas of NEVADA than in 1974. Aedes spp. were the most prevalent statewide, but Culex tarsalis was the dominant species in several localized areas at certain times of the year. Compared with 107,000 acres in 1974, over 185,000 acres were treated by aircraft in Carson City, Churchill, Douglas, Elko, Humboldt, Lander, Lyon, and Washoe Counties. Of the total, 88,000+ acres were treated in Churchill County and 45,000+ acres were treated in Lander County. The wet spring caused mosquito problems in many UTAH counties, particularly those lacking an effective control district. Control was effective in Salt Lake, Weber, and Utah Counties, helpful in Davis County, Moab, Grand County, and Delta, Millard County. Much annoyance was reported from Cache County, areas of Millard, Washington, Juab, Tooele, Carbon, Emery, Duchesne, and Box Elder Counties.

High populations of mosquitoes annoyed man and animals in eastern and southeastern NORTH DAKOTA due to a heavy late June rainfall which caused extensive flooding throughout the Red River Valley. As of July 11, five percent of the total trap counts at Fargo, Cass County, yielded Culex tarsalis. By July 20 several light traps caught 15,000-20,000 mosquitoes, of which 90-96 percent were C. tarsalis. The first brood of Aedes vexans in MINNESOTA emerged May 26 in the Twin City metropolitan area. Populations of A. vexans and single-brooded Aedes spp. were heavy in many areas by the end of May. Heavy rains in early June resulted in continuing high populations of Aedes, primarily vexans, with A. sticticus also important. Coquilleftidia perturbans began emergence the second week in June and was a very important nuisance mosquito June through July. Numbers in trap collections in the metropolitan area declined during August with A. vexans and Culex tarsalis predominant. In late July, high counts of C. tarsalis were present in the Red River Valley area that had been extensively

flooded earlier. Because of the imminent health hazard, large-scale control efforts were conducted during July 26 to August 18. The mosquito season in MICHIGAN during 1975 was one of the longest in recent years, lasting in some areas from mid-May through most of October. Temporary woodland pools produced the usual huge crop of early season Aedes species during the last half of May; periodic heavy local rainstorms during late July, August, and September created many breeding sites for Aedes vexans later in the summer. This, combined with unusually warm weather in September and October, resulted in huge populations of A. vexans, as well as other Aedes species, throughout the late summer and prolonged their biting activity well into October. Confirmed human cases of St. Louis encephalomyelitis, a mosquito-borne virus disease, were reported in Michigan for the first time beginning the first week in August. This outbreak completely overshadowed the confirmed cases of California encephalomyelitis in humans and eastern equine encephalomyelitis in horses reported during the last half of the summer.

Aedes aegypti adults and larvae were collected August 28 in Montgomery County for the first time in ARKANSAS since 1965. Mosquitoes were unusually heavy throughout 1975 in TENNESSEE. Several vector-related disease cases in man were reported by various State public health departments. In ALABAMA, Culex pipiens quinquefasciatus and other species were heavy all year and became a major health hazard in August, September, and October. By mid-September, 67 cases of encephalomyelitis had been confirmed or suspected, with 25 occurring in Jefferson County. Several cities organized massive eradication and control efforts. Aedes taeniorhynchus was responsible for the only big mosquito problem in FLORIDA during 1975. A tremendous buildup in late June and early July in Everglades National Park, Dade County, migrated into populated areas. At Key Biscayne, Monroe County, one light trap collected 9,024 females on July 8.

The following mosquitoes accounted for 94.9 percent of the females trapped in DELAWARE in 1975: Culex spp. (55.9 percent), Aedes vexans (27.2 percent), A. sollicitans (4.4 percent), Coquillettidia perturbans (4.3 percent), and Anopheles crucians complex (3.2 percent). The greatest increase in any one species over 1974 was with A. vexans which constituted only 14.4 percent of the total females in 1974 but rose to 27.2 percent of the total in 1975. Extended rains during July 9-17 was primarily responsible.

FACE FLY (Musca autumnalis) adults in IOWA appeared on pastured cattle in Lee County during the week ending May 9. Populations increased through August and peaked on Story County cattle at up to 50 per head during the week ending August 15. Face fly in NEBRASKA averaged 35-40 per head on untreated cattle in canyon and Platte River Valley pastures in Lincoln and McPherson Counties in mid-August. Counts in OKLAHOMA ranged moderate to heavy, from early May through September in many infested counties. Five new counties were infested in 1975.

Face fly movement across ARKANSAS was extensive for the first time. In early June, it was found on cattle in Benton and Washington Counties. Numbers ran as high as 200 per animal. Concentrated surveys in July and August found 34 infested counties, about three-fourths of the State, 32 of which were new county records.

Face fly peaked in June in Arkansas. The first infestations in MISSISSIPPI were observed on cattle in Monroe and Chickasaw Counties the last week in March. Populations peaked by July 1 with 20-40 per face in Chickasaw, Monroe, Pontotoc, Marshall, and Panola Counties. Other peaks in August and September ranged 15-20 per face. Found in 20 new counties in 1975, face fly is currently in 46 of the 82 Mississippi counties. Face fly became a major pest of cattle in extreme northern ALABAMA and exceeded the heavy populations first recorded in 1973 and again in 1974. Control efforts were difficult.

Face fly infestations were heavy in central and eastern TENNESSEE. Counts were above control levels from spring through early fall. Many cattle were blinded by pinkeye. Controls generally were ineffective. The overwintering population in NORTH CAROLINA was generally heavy on cattle in the southeastern mountain counties. Counts revealed an average of 15 (range of 5-50) flies per head April 20-24. Adults per head averaged 30 in the mountains and 15 in the Piedmont in late June. All 25 herds examined west of Wake County harbored face flies. Face flies first appeared on cattle during early May in central KENTUCKY. Populations peaked from mid-June to July. Adults averaged 25 (ranged 4.5-37.1) per animal. Counts appeared slightly fewer than in 1974.

HORN FLY (*Haematobia irritans*) was common on all untreated cattle in UTAH. Beaver, Washington, and San Juan Counties reported heavy populations. Horn fly was active on OKLAHOMA cattle from mid-March to early November. Counts were heavy (up to 1,000 per head) during July and heavy again (400-1,000 per head) during August. Numbers gradually decreased after August. Adults were first noted in IOWA on pastured cattle in Lee County during the week ending May 9. Populations peaked in August but were generally lighter in 1975 than in 1974. Horn fly continued to be the most economic insect species in ARKANSAS. Control measures ranged from adequate to haphazard to none at all. Losses are estimated to range \$12,000,000 to \$15,000,000 annually.

Horn fly counts in NORTH DAKOTA on range cattle were 5 per animal in Billings County with 15 per animal in Golden Valley County by June 6. Populations ranged 100-500 (averaged 400) per animal on beef cattle in McKenzie County by July 3. Annoying and damaging infestations occurred throughout the fly season, beginning in late March in southern ALABAMA. Infestations were limited mainly to beef cattle herds where proper control was not applied. First adults of the season in MISSISSIPPI appeared on beef cattle in Jones and Oktibbeha Counties week ending February 28. Populations peaked at 500-1,000+ on beef cattle across the State by mid-May, decreased to 200+ by August, and increased again in September. In KENTUCKY, peak populations of 200 per animal in August 1975 were lighter than the peak in 1974 of 300-500 per animal.

The first major outbreak of STABLE FLY (*Stomoxys calcitrans*) in FLORIDA occurred on the gulf beaches of the northwestern area on September 14 when a landing rate of 41 flies per minute was recorded at Cape San Blas, Gulf County, and 25 per minute on Walton County beaches. Minor flights occurred in the Tallahassee area, Leon County, during February and March and in the beach areas in late May, June, and July. Effective aerial spraying on the beaches and unusually heavy rainfall kept numbers light through

the last half of September and well into October. Fly breeding on seaweed deposits, more extensive than during the past 11 years, declined by mid-September. The largest flights of stable flies on gulf beaches occurred almost daily during the last half of October and the first week of November. Landing rates were more than 100 per minute on some beaches. Sprays kept flies under control at the end of the season. Stomoxys calcitrans in NEBRASKA averaged 20 per leg on untreated feedlot animals in Lincoln, Keith, Logan, and McPherson Counties in the southwest district in late July. Counts declined in August due to drying of breeding sites.

CATTLE GRUBS (Hypoderma spp.) in NORTH DAKOTA ranged 1-45 (averaged 5.4) larvae per animal on 12 percent of the animals examined at Dickinson, Mandan, Minot, Rugby, and Turtle Lake livestock auctions March 10 through April 3. Adults were running cattle in Sioux and Adams Counties by June 13, and in Dunn, Mercer, and McKenzie Counties by June 27. COMMON CATTLE GRUB (H. lineatum) populations in central KENTUCKY were about the same as in 1974. Larvae began to appear in the backs of cattle in early January and peaked in mid-March.

BLACK FLY populations in NEVADA were much heavier than in 1974 and heavier in some areas than in 1973 when populations were above normal. Biting by adults of mostly Simulium venator were unusually heavy along the Humboldt River in Humboldt, Lander, and Pershing Counties from June through mid-July with the towns of Battle Mountain, Golconda, Lovelock, and Winnemucca seriously affected. Prosimulium and Simulium spp. were very abundant in Grafton and Coos Counties, NEW HAMPSHIRE, in May and June, causing severe discomfort to visitors in mountain areas. Simulium nyssa was unusually abundant in MAINE during May and June and caused a great deal of annoyance in the Penobscot Valley. Simulium venustum was rare in the Penobscot Valley but abundant in some other areas. Dry weather during the summer caused populations to decline rapidly during early July in most areas.

A BLACK GNAT (Leptoconops n. sp.) in NEVADA in the Black Rock, Granite Creek, and Smoke Creek Deserts of Humboldt, Pershing, and Washoe Counties was probably the heaviest in the last 5 years with humans in the area seriously affected, especially during May and June. Recent studies indicate that this species listed in previous reports as L. kerteszi is an undescribed species.

AMERICAN DOG TICK (Dermacentor variabilis) was very numerous in OKLAHOMA in many areas, especially in May and June. Numbers ranged up to 100 per head on cattle in Pawnee County in addition to many reports on people and dogs. There were 126 cases of Rocky Mountain spotted fever vectored by the American dog tick reported in NORTH CAROLINA through October 1975. These are 16 more cases than reported through November 1974. Again, the area including Wake, Durham, Guilford, Rowan, and Mecklenburg Counties had the highest incidence. This species was a serious pest in DELAWARE as early as mid-April, especially in the northern area. Expanded populations in RHODE ISLAND, which were heavier in the northern area, were highly troublesome much earlier than in the past 6 years. American dog tick in NEW HAMPSHIRE has become very abundant at Wolfeboro, Carroll County. It is increasing its range

west and south and is now found throughout the southern half of the State. Recent mild winters may be contributing to the increase of American dog tick in distribution and abundance.

CATTLE TAIL LOUSE (Haematopinus quadripertusus) was evaluated on a seasonal basis during 1975 in FLORIDA. An apparent buildup of eggs in tail brushes was seen in the fall and winter. Cold temperatures reduced hatch but adults continued to lay eggs. The ratio of adults, immatures, and eggs stabilized during the spring and summer, making this a true summer parasite. Adults in the fall ranged from 5 to 400 on infested animals, with viable egg populations exceeding 100 for a 15-cm part in the tail brush hair. Extreme variation was seen within a given herd at any time. This pest was commonly found on untreated animals.

CATTLE BITING LOUSE (Bovicola bovis), LONGNOSED CATTLE LOUSE (Linognathus vituli), and SHORTNOSED CATTLE LOUSE (Haematopinus eurysternus) were serious external pests on cattle, especially range beef cattle, throughout ALABAMA. Considerable weight and vitality were lost during the critical late winter months.

One specimen of GULF COAST TICK (Amblyomma maculatum) was collected in Sevier County, ARKANSAS, July 1 for the first record of this pest since 1950 or 1951.

ITCH MITE (Sarcoptes scabiei) in NEW HAMPSHIRE increased sharply in incidence. Scabies was not reported before 1973, but 14 cases were reported in 1974.

HOUSEHOLDS AND STRUCTURES

SUBTERRANEAN TERMITES (Reticulitermes spp.) in homes, office buildings and other structures were unusually heavy at Reno and Sparks, Washoe County, and in the Lake Tahoe area of Douglas and Washoe Counties. Reproductives, found in OKLAHOMA buildings as early as mid-January, began swarming in mid-March and continued through early May.

EASTERN SUBTERRANEAN TERMITE (Reticulitermes flavipes) continued as the major structural pest throughout ALABAMA. Damage and cost of preventive controls rank it among the top 5 economic insects in the State. The first report of swarms in KENTUCKY was on April 26, almost one month later than in 1974. In MARYLAND, it is one of the most costly insect pests, estimates of damage range into the millions of dollars. Complaints in RHODE ISLAND were slightly reduced in volume after 2 years of heavy infestations.

Heavy populations of GERMAN COCKROACH (Blattella germanica) in Baltimore, MARYLAND, were frequently encountered in public housing projects. These populations are almost never suppressed for more than 1-2 months.

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

	<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Phyllosticta bromeliae</u> Alm. & Cam. a leaf spot	imperfect	on bromeliad plants	Los Angeles	Nicaragua	CA
<u>Lechriops</u> sp. a curculionid beetle	all	in lumber	New Orleans	Brazil	LA
New genus near <u>Aleurodicus</u> n. sp. an aleyrodid	pupal	on orchid plants	Brownsville	Mexico	TX
<u>Prionobrachium</u> sp. or near a curculionid beetle	adult	with orchid plants	Miami	Peru	FL
<u>Trochrorhopalus</u> sp. prob. <u>striangulatus</u> (Gyllenhal) a curculionid beetle	all	in sugarcane	Hawaii	Malaysia	HI
<u>Xylotrechus</u> sp. near <u>phidius</u> (Newman) a cerambycid beetle	pupal and adult	in wood pallets containing bags of celery seed	New York	India	NY

Reprinted from Weekly Weather and Crop Bulletin supplied by the National Weather Service, NOAA.

HIGHLIGHTS: Cold weather dominated the Nation during the week. From the Rockies, eastward to the Atlantic, average temperatures were below normal. Portions of Texas, the gulf coast and the north-eastern States were as much as 6 to 7 degrees below normal. West of the Rockies was warmer than normal by the same amount. Most of the precipitation fell east of the Appalachians and in the Gulf States. Snow was reported from the northern Rockies through the Great Lakes and into western New York.

TEMPERATURES AND PRECIPITATION: A predominantly dry weather pattern persisted over the Nation early Monday. Western Montana and southern Florida reported the Nation's only precipitation. Temperatures dropped to the 20's and 30's through most of the northern Atlantic Coast States in the early morning hours. Pennsylvania listed 23 degrees at Germania and 25 degrees at Bradford, while Watertown, New York, noted 29 degrees. Two large high pressure centers, one over Pennsylvania and the other several hundred miles off the Pacific Coast, dominated the afternoon weather pattern. The Pennsylvania high kept early afternoon temperatures in the 50's over the northern Atlantic Coast States and in the 60's in the middle Atlantic Coast States and the Ohio Valley. It also pushed unseasonably warm air into the Plains States. The Pacific high promoted mostly clear skies and warm readings through California and the Southwest. A cold front moved through the northern Plains States with cooler weather for the area but little rainfall. By contrast, the most severe flooding in 40 years continued along the lower Broad River and the Congaree River in South Carolina.

The large high pressure area continued to provide clear skies, light winds, and cool temperatures for the eastern United States Tuesday. Notable early morning low readings included 21 degrees at Concord, New Hampshire; 22 degrees at Saranac Lake, New York; 38 degrees at Columbia, South Carolina; and 45 degrees at Tallahassee, Florida. Most of the Nation had little precipitation, as large high pressure centers controlled the weather from coast to coast. After heavy rains and extensive flooding over the weekend, residents in the Atlantic Coast States and the Appalachians welcomed the dry trend. However, the northern Plains area could have utilized some of the excessive moisture from the eastern States. Fall weather dominated most of the Nation on Wednesday. Most areas reported fair or sunny skies and mild temperatures. Very limited precipitation dampened the Nation. Precipitation included some widely scattered showers and thundershowers over southeastern Arizona and southwestern New Mexico and also in the vicinity of a cold front from upper Michigan, across the northern Appalachians, and into northern New England. Light showers developed over the Lower Rio Grande Valley in Texas. A strong, dry cold front, pushed by winds gusting up to 50 m.p.h., raced through the upper Midwest Thursday. The strong winds kicked up areas of blowing dust in the drought-ridden Dakotas, much of Montana, and western Minnesota. Behind the cold front, 40 degree readings prevailed in North Dakota while 70's were reported in the Mississippi Valley and 80's along the gulf coast. Record lows for the day included 31 degrees in Muskegon, Michigan, and 56 degrees in Orlando, Florida.

A band of clear skies reached across Texas to Arizona, from South Carolina to northern Georgia, over the southern half of the Ohio Valley, and across Kansas and Colorado. A good portion of the Intermountain and Pacific coast regions also reported clear skies. However, portions of the Northeast received cold temperatures, some snow, and hail. The other precipitation in the Nation occurred as scattered showers and thundershowers in southern New Mexico and southwestern Texas. By late Friday the cold air mass had moved to a line from eastern New York to southwest Texas. Cold windy weather dominated behind the front. Temperatures around the Nation at 2 p.m. ranged from 86 degrees at Brownsville, Texas, ahead of the front to 32 degrees at Devils Lake, North Dakota, behind the front. Precipitation during the day ranged from snow flurries in the upper Mississippi Valley to light showers in the Lakes area and scattered showers and thunderstorms along and ahead of the front. Saturday morning was cold in the northern Plains. Many record low temperatures were set. Included were: Bismarck, North Dakota, 12 degrees; Huron, South Dakota, 17 degrees; and Valentine, Nebraska, 17 degrees. By afternoon, the cold air had moved into North Carolina and south Texas. Rain and showers were reported from the central Atlantic States across the Tennessee Valley and along the gulf coast into Florida. Some light snow was scattered from the upper Mississippi Valley across the Great Lakes. Early Sunday morning temperatures were cold over most of the Nation with frost reaching as far south as the Texas panhandle and northern Oklahoma and Arkansas. The cold weather was unseasonable and many record low temperatures were set. Snow fell in Montana, Wyoming, and North Dakota during the afternoon. Also cold air from off the Lakes into western New York was triggering heavy snow showers. Elsewhere, some rain or drizzle was being reported in eastern North Carolina and thunderstorms in Florida.

UNITED STATES DEPARTMENT OF AGRICULTURE
Animal and Plant Health Inspection Service
Hyattsville, Maryland 20782

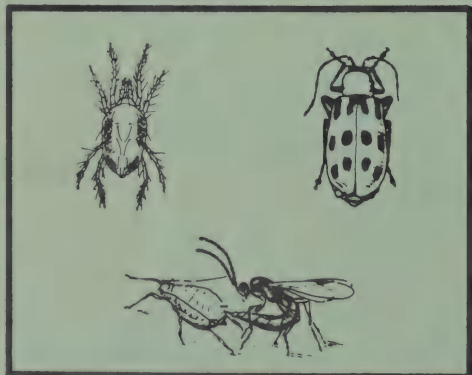
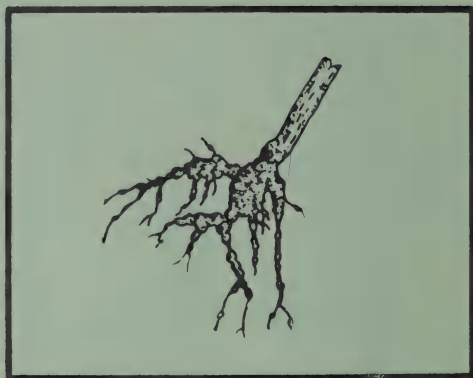
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October 29, 1976

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Cooperative PLANT PEST REPORT

PROCUREMENT SECTION
CURRENT SERIAL RECORDS

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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
Federal Building #1
Hyattsville, Maryland 20782

COOPERATIVE PLANT PEST REPORT

HIGHLIGHTS

Current Conditions

FALL ARMYWORM damage on small grains in 3 counties in Texas; heavy and scattered in southwest Oklahoma. (p. 791). Heavy damage continued to lawns in Texas and to alfalfa in Oklahoma. (p. 792).

PEANUT EARLY LEAF SPOT, a SCLEROTINIA BLIGHT, POD ROTS, and NEMATODES heavy on peanuts in Oklahoma. (p. 793).

Detection

● A THRIPS in Pennsylvania is a new Western Hemisphere record. (p. 798).

● Additional ORIENTAL FRUIT FLY males trapped in Los Angeles County, California. (p. 797).

New State records include a MEALYBUG in Alabama (p. 792) and a PUNCTUREVINE SEED WEEVIL in Kansas (p. 804).

For new county and island records see page 798.

Special Reports

Summary of Insect Conditions in the United States - 1975

Beneficial Insects (pp. 802-807).

Federal and State Plant Protection Programs (pp. 807-815).

New Records of *Utetheisa pulchella* (L.), an Old World species, in the Western Hemisphere and Characters for its Recognition (Lepidoptera: Arctiidae) (pp. 817-819).

A New Species of Leafmining Fly on Mealycup Sage (Diptera; Agromyzidae) (pp. 820-822).

Notes on Several Cockroaches of Southeastern United States and on the name "Palmettobug" (pp. 823-826).

Spider Mites (Tetranychidae: Acarina) from Michigan (pp. 827-830).

● One issue of the CPPR will be published each month for November, December, and January. This action is being taken because of reduced insect activity during this period and the need for the editorial staff to concentrate on special projects.

Reports in this issue are for the week ending October 22, unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ARMY CUTWORM (Euxoa auxiliaris) - OKLAHOMA - First adults of season taken in Payne County light trap October 15. (OK Coop. Surv.)

BET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Fall spraying underway in Kern County, averaged 5,690 acres treated daily. Kill checks in Poso Creek area indicate 98+ percent control. (CA Pest Rep.).

CORN EAWORM (Heliothis zea) - ALABAMA - Larvae damaged almost all okra pods in home garden at Monroeville, Monroe County. (Lemons).

CORN LEAF APHID (Rhopalosiphum maidis) - MICHIGAN - Present on early planted wheat week ending October 15. No problem expected unless temperatures and populations increase. (Ruppel).

GREENBUG (Schizaphis graminum) - WASHINGTON - Controls applied on small grains in Klickitat and Walla Walla Counties. Populations light to moderate in Benton and Franklin Counties. (Pike, Klostermeyer). TEXAS - Light on wheat in Panhandle area. (Patrick). OKLAHOMA - Wheat infestation scattered and very light in southwest counties. (OK Coop. Surv.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - KANSAS - Some threatening infestations on seedling alfalfa in Mt. Hope area, Sedgwick County. (Bell).

TOBACCO BUDWORM (Heliothis virescens) - ARKANSAS - Heavy in fall gardens, especially tomatoes, in Desha County, some H. zea. Larvae also drilled in watermelons and cantaloupes. (Wall).

CORN, SORGHUM, SUGARCANE

INSECTS

EUROPEAN CORN BORER (Ostrinia nubilalis) - MICHIGAN - Second generation active in corn week ending October 15. Larvae in about 50 percent of corn stems in Ottawa and Newago Counties. One Ottawa County field badly damaged, about 33 percent of stems lodged. (Hammon).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Corn girdling continued in High Plains. (Morrison).

SMALL GRAINS

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Damaged small grains in Taylor, Tom Green, and Gillespie Counties. (Wilson). OKLAHOMA - Wheat damage heavy in scattered areas in southwest counties. Larvae light in most fields. Larvae still present in Jackson County October 21 after 21-degree F. temperatures October 19. (OK Coop. Surv.). KANSAS - Damaged scattered wheat fields in Kiowa and Comanche Counties week ending October 15. Some treatments applied; some replanting. Pupation underway. (Bell).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Occasional larvae damaged recently emerged small grain plants seeded behind recently harvested peanuts in some Pike County fields. (McLean).

HESSIAN FLY (Mayetiola destructor) - OKLAHOMA - Nearly full-grown larvae 0-5 (averaged 0.8) per plant in field of Triumph variety wheat in Skedee area, Pawnee County. (OK Coop. Surv.).

AN APHID (Rhopalosiphum padi) - TEXAS - Very light on wheat in Dallam County. (Patrick). MISSISSIPPI - Light infestations of these and other aphids present on winter wheat across State. (Anderson).

TURF, PASTURES, RANGELAND

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - TEXAS - Severe damage to St. Augustinegrass and bermudagrass lawns continued throughout south-central area. (Cole).

RANGE CATERPILLAR (Hemileuca oliviae) - TEXAS - Egg laying noted in area south of Texline, Dallam County. (Patrick).

A MEALYBUG (Symecoccus spirapunctus) - ALABAMA - Collected on Cynodon dactylon (bermudagrass) at Auburn, Lee County, August 17, 1976, by C.H. Ray. Determined by M.L. Williams. This is a new State record. (McQueen).

A LEAFHOPPER (Cicadula longiseta) - CALIFORNIA - Nymphs and adults infested lawn grass at Salinas, Monterey County. Counts 3-6 per sweep. (CA Pest Rep.).

FORAGE LEGUMES

DISEASES

COMMON LEAF SPOT (Pseudopeziza medicaginis) - NEW MEXICO - Moderate to heavy foliar damage on alfalfa in Espanola area, Rio Arriba County. (NM Coop. Rep.).

INSECTS

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Light to moderate in most alfalfa fields in southwest counties but scattered and heavy in Comanche County. YELLOWSTRIPED ARMYWORM (S. ornithogalli) also present in most fields. (OK Coop. Surv.).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - MICHIGAN - Adults fed on flowers of alfalfa and Cirsium arvense (Canada thistle) in Cass County week ending October 15. Adults will remain in field until first heavy frost. (Ruppel, Harmon).

PEA APHID (Acyrtosiphon pisum) - UTAH - Still heavy in some Cache County alfalfa fields. (Knowlton). NEW MEXICO - Very light numbers persisted on alfalfa during early fall season. Counts of 0-30 per sweep observed in Bernalillo County during late September. (NM Coop. Rep.).

SOYBEANS

DISEASES

SOYBEAN POD AND STEM BLIGHT (Diaporthe phaseolorum var. sojae) - OKLAHOMA - This disease, FROGEYE LEAF SPOT (Cercospora sojae), and SOYBEAN TRUNCATA ANTHRACNOSE (Collectotrichum dematium var. truncata) reported on soybeans in Le Flore, Sequoyah, Haskell, and Muskogee Counties. All not as heavy as at this time last year. (OK Coop. Surv.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - OKLAHOMA - Very heavy infestation recovered from soybean sample from Le Flore County. (OK Coop. Surv.).

INSECTS

BEAN LEAF BEETLE (Cerotoma trifurcata) - OKLAHOMA - Damaged margins of scattered fields of late maturing soybeans in east-central area. (OK Coop. Surv.).

GREEN STINK BUG (Acrosternum hilare) - NORTH CAROLINA - Nymphs and adults of this species and BROWN STINK BUG (Euschistus servus) up to 1.5 per foot of row in 2 of 15 Bragg soybean fields near Harrells, Sampson County. Damage minimal due to crop maturity; no treatment recommended. (Hunt).

PEANUTS

DISEASES

PEANUT EARLY LEAF SPOT (Mycosphaerella arachidicola) - OKLAHOMA - Heavy in many fields in peanut producing counties, especially those not maintaining fungicide spray program. (OK Coop. Surv.).

A SCLEROTINIA BLIGHT (Sclerotinia sp.) - OKLAHOMA - Heavy in many peanut fields in Caddo and Hughes Counties. Light infestations in Grady, Carter, Love, and Stephens Counties. (OK Coop. Surv.).

POD ROTS - OKLAHOMA - Pellicularia filamentosa, Fusarium spp. and other soil fungi extensively damaged dryland and irrigated peanut fields. (OK Coop. Surv.).

NORTHERN ROOT-KNOT NEMATODE (Meloidogyne hapla) - OKLAHOMA - Of peanut plant and soil samples collected this fall by Pest Management Scouts, 83 percent contained damaging nematode populations, 66 percent this species and 17 percent SMOOTH-HEADED LESION NEMATODE (Pratylenchus brachyurus). Further supports need to sample fields in fall when nematodes are more easily detected. (OK Coop. Surv.).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Active in San Angelo area, damaged young cotton squares and bolls. Most of cotton killed by frost. (Wilson).

COLE CROPS

INSECTS

CABBAGE LOOPER (Trichoplusia ni) - TEXAS - Damaged cabbage, broccoli, and various greens in several counties in south-central area. (Cole).

GENERAL VEGETABLES

INSECTS

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - ALABAMA - All stages heavy and damaged 3 small fields of sweetpotatoes equaling 0.5 acre at Luverne, Crenshaw County. (Handley).

FALSE CELERY LEAFTIER (Udea profundalis) - CALIFORNIA - Extremely heavy flights in Stockton area, San Joaquin County. Wide host range includes tomato, beet, squash, lettuce, alfalfa and bean. Damage light but adults nuisance around lights at night. Black-light trap catch at north Stockton, 105 moths for one night. (CA Pest Rep.).

DECIDUOUS FRUITS AND NUTS

INSECTS

DRIEDFRUIT BEETLE (Carpophilus hemipterus) - CALIFORNIA - Heavy on figs split by abnormal rains in Kern County and caused moderate but widespread damage throughout Fresno County. (CA Pest Rep.).

WALNUT CATERPILLAR (Datana integerrima) - VIRGINIA - Clusters of larvae fed on pecan tree in Sussex County October 14. (Allen).

PECAN WEEVIL (Curculio caryae) - MISSISSIPPI - Nuts from Lowndes County indicate larvae full grown with emergence underway. (Neel).

WALNUT HUSK FLY (Rhagoletis completa) - UTAH - Heavily infested black walnuts at Logan, Cache County. (Davis, Knowlton).

BLACK PECAN APHID (Tinocallis caryaefoliae) - ALABAMA - This species and YELLOW PECAN APHID (Monellia spp.) developed to extreme numbers on several thousand pecan trees throughout Covington County. (Linder).

SMALL FRUITS

INSECTS

RAISIN MOTH (Cadra figulilella) - CALIFORNIA - Damaged raisin grapes at scattered locations throughout Fresno County. (CA Pest Rep.).

A PLANT BUG (Largus cinctus) - OREGON - Adults heavy and caused considerable damage to strawberries in a south Salem, Marion County, garden. (Westcott).

FOREST AND SHADE TREES

INSECTS

AN ARMORED SCALE (Chionaspis heterophyllae) - ALABAMA - Collected on Pinus echinata (shortleaf pine) at Leesburg, Cherokee County, August 10, 1976, by C.H. Ray. Determined by M.L. Williams. This is a new county record. (McQueen).

A SOFT SCALE (Pseudophilippia quaintancii) - ALABAMA - Collected on Pinus echinata (shortleaf pine) at Wetumpka, Elmore County, July 20, 1976, by C.H. Ray. Determined by M.L. Williams. This is a new county record. (McQueen).

WESTERN OAK LOOPER (Lambdina fiscellaria somniaria) - OREGON - First adults of season numerous in blacklight trap on Crosian Ridge, south Salem, Marion County; substantial increase over 1975. Possible serious defoliation to oak. No significant damage for about 10 years. (Westcott).

FALL WEBWORM (Hyphantria cunea) - TEXAS - Fed on elm trees in south-central area. (Cole).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Detection surveys utilizing multilure traps revealed this species widespread in western area, extending from near Scappoose, Columbia County, southward through the Willamette Valley to State border. Western boundary appears to correspond roughly with eastern foothills of coast range. No specimens taken in any coastal counties. (Penrose).

A SCOLYTID BEETLE (Xylosandrus compactus) - ALABAMA - Seriously damaged several tree species, including dogwood, magnolia, redbud, and black gum, at Mobile, Mobile County. All stages of insect in branches. (Brackin).

AN APHID (Therioaphis tiliae) - NEVADA - Heavy infestations still present on linden at Reno, Washoe County. (Bechtel).

PAINTED MAPLE APHID (Drepanaphis acerifoliae) - NEVADA - Scattered, heavy infestations on silver maple in the Reno and Sparks area, Washoe County. (Bechtel).

MULBERRY WHITEFLY (Tetraleurodes mori) - NEVADA - Averaged 10 per leaf on scattered mulberry trees at Las Vegas, Clark County. (LeBas).

MAN AND ANIMALS

INSECTS

HORN FLY (Haematobia irritans) - MISSISSIPPI - Ranged 100-200 per head in Monroe County October 19. Populations decreased due to cool weather. (Combs). FLORIDA - Averaged 78 per animal on small herd of cows at Gainesville, and 168 per animal on small herd near Gainesville, Alachua County. (FL Coop. Surv.).

FACE FLY (Musca autumnalis) - MISSISSIPPI - Adults at overwintering sites moderate. Cool weather increased overwintering activity in Oktibbeha County. (Combs).

CAT FLEA (Ctenocephalides felis) - CALIFORNIA - Heavy throughout Kern County and Bay Area, including San Francisco, San Mateo, Santa Clara, and Alameda Counties. Treatment of yards necessary. The moisture from tropical storms and mild temperatures aided buildup. (CA Pest Rep.).

TROPICAL RAT MITE (Ornithonyssus bacoti) - CALIFORNIA - Increased in importance in south Sacramento and Carmichael, Sacramento County. Controls of high rat populations caused problems with the mites infesting people. (CA Pest Rep.).

MISCELLANEOUS WILD PLANTS

INSECTS

AN ARMORED SCALE (Aonidomytilus solidaginis) - ALABAMA - Collected on Eupatorium capillifolium (dog fennel) on drill field at Auburn, Lee County, June 8, 1976, by B.J. Muse. Determined by M.L. Williams. This is a new county record. (McQueen).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

LADY BEETLES - INDIANA - During 1976 fall corn insect damage survey, 121 adults of Coleomegilla maculata observed on 4,725 stalks of corn examined, as compared with 159 in 1975. Of these, 6, were parasitized by Perilitus coccinellae (a braconid wasp) and, 3 dead of unknown causes. Total of 13 specimens of Hippodamia convergens observed on same plants, plus unidentified larvae. Single specimen of Coccinella novemnotata observed. (Meyer).

A CHALCID WASP (Brachymeria ovata) - NEW MEXICO - Populations parasitized 80 percent of Hemileuca oliviae (range caterpillar) in 2,500 acres near Clayton, Union County. (NM Coop. Rep.).

FEDERAL AND STATE PROGRAMS

INSECTS

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Male flight increased slightly at Porterville, Tulare County, to 45.47 males per trap. Pheromone trap removal on schedule. Field evaluations of release programs conducted at Porterville and prerelease samples examined to determine already existing parasites at various spots in project area. (CA Pest Rep.).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Fifteen males taken in Steiner traps at Los Angeles, Los Angeles County, October 22, 1976. Additional questionable male oriental fruit fly taken at El Segundo, south of Los Angeles International Airport same day. Flies trapped in area extending northeast of Los Angeles International Airport eastward to Inglewood and Lennox suburbs. Male annihilation treatments scheduled for October 26 or October 27. These finds will entail treatments on about 26 square miles. (PPQ).

A WHITEFRINGED BEETLE (Graphognathus sp.) - VIRGINIA - Generally infested 3-acre tobacco field in Halifax County. County infested for several years; first time this field infested. (Allen).

WEEDS

BIDDYBIDDY (Acaena anserinifolia) - CALIFORNIA - Taken at Stinson Beach, Marin County. First find since spring of 1974. Upright seed heads removed, all root systems dug out. All seeds and plant material burned. (CA Pest Rep.).

RUSH SKELETONWEED (Chondrilla juncea) - CALIFORNIA - Bio-control activities emphasized with release of Puccinia chondrillina, (a rust) at Loomis and Newcastle, Placer County, and Placerville, El Dorado County, on a meter-square plot. Establishment will not be known until late October with appearance of small pustules on rosette leaves. (CA Pest Rep.).

CORRECTIONS

CPPR 1(36):590 - THIRD PARAGRAPH - "A SOD WEBWORM (Pediasia trisectus) ..." should read "A SOD WEBWORM (Pediasia trisecta) ..."

CPPR 1(40):693 - LAST PARAGRAPH - "A LEAF BEETLE (Systema frontalis) ..." should read "A FLEA BEETLE (Systema frontalis) ..."

CPPR 1(40):698 - "SCARAB BEETLES ... Cotinus nitida ..." should read "SCARAB BEETLES ... Cotinis nitida ..."

CPPR 1(40):707 - THIRD PARAGRAPH - "... A. londoi ..." should read "... A. kondoi ..."

CPPR 1(40):710 - LAST PARAGRAPH - "A THRIPS (Sericothrips variabilis) ..." should read "A THRIPS (Sericothrips variabilis) ..."

CPPR 1(41):719 - MAN AND ANIMALS - MOSQUITOES - MARYLAND - "Common in Prince Georges County ..." should read "A. vexans common in Prince Georges County ..."

DETECTION

NEW WESTERN HEMISPHERE RECORD

INSECTS

A THRIPS (Tmetothrips subapterus (Haliday)) - PENNSYLVANIA - Eight females collected on Stellaria graminea (little starwort) at Rew, McKean County, by S.W.T. Batra, July 27, 1975. Determined by K. O'Neill. Also observed on Plantago maritima (European seaside plantain), Stellaria media (chickweed), Galium palustris (marsh bedstraw), Juncus sp. (a rush), Lolium perenne (perennial ryegrass), Clematis vitalba (travelersjoy), Lonicera caprifolium (sweet honeysuckle), and Robinia pseudoacacia (black locust). Previously taken from England, Finland, Holland, Germany, Poland, Austria, Czechoslovakia, Lithuania, Rumania, Ukraine, Russia, and Siberia. (PPQ).

NEW STATE RECORDS

INSECTS

A MEALYBUG (Symlococcus spirapunctus) - ALABAMA - Lee County. (p. 792).

A PUNCTUREVINE SEED WEEVIL (Microtharus lareynii) - KANSAS - Barber County. (p. 804).

NEW COUNTY AND ISLAND RECORDS

INSECTS

AN ARMORED SCALE (Aonidomytilus solidaginis) - ALABAMA - Lee (p. 796).

AN ARMORED SCALE (Chionaspis heterophyllae) - ALABAMA - Cherokee (p. 795).

CLOUDYWINGED WHITEFLY (Dialeurodes citrifolii) - HAWAII - Lanai (p. 799).

A EULOPHID WASP (Aneristus sp.) - HAWAII - Hawaii Island (p. 799).

EUROPEAN EARWIG (Forficula auricularia) - HAWAII - Oahu (p. 799).

GIFFARD WHITEFLY (Bemesia giffardi) - HAWAII - Lanai (p. 799).

A SOFT SCALE (Pseudophilippia quaintancii) - ALABAMA - Elmore (p. 795).

A LYGAEID BUG (Nysius sp. near vinitor) - HAWAII - Hawaii Island (p. 799).

A WHITEFLY (Paraleyrodes naranjiae) - HAWAII - Lanai (p. 799).

A BRACONID WASP (Microctonus aethiops) - OHIO - Allen, Van Wert, Crawford, Ottawa, Erie. (p. 804).

HAWAII PEST REPORT

General Vegetables - CABBAGE WEBWORM (Hellula rogatalis) infestations (1-5 larvae per plant) and damage (60 percent of plants) heavy on 0.50 acre of mustard cabbage at Pearl City, Oahu. Infestations by DIAMONDBACK MOTH (Plutella xylostella) larvae (2-5 per plant on 50 percent of plants) moderate on mustard cabbage at Pearl City and on backyard plantings of head cabbage at Lanai City, Lanai. GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) infestations moderate on 2 acres of eggplant at Pearl City. CARMINE SPIDER MITE (Tetranychus cinnabarinus) light on eggplant at Pearl City and moderate on backyard plantings of eggplant at Lanai City. ONION THRIPS (Thrips tabaci) infestations (2-3 per plant) and damage (20-50 percent of plants) light to moderate on 4 acres of green onions at Pearl City. Infestations by a TREEHOPPER (Antianthe expansa) light to heavy (20-50 per colony, 10-20 colonies per plant) on backyard plantings of tomato and chili pepper at Lanai City. CHINESE ROSE BEETLE (Adoretus sinicus) feeding damage moderate to heavy (50-75 percent of foliage consumed) on many backyard plantings of pole beans, corn, and eggplant at Lanai City. (L. Nakahara).

Ornamentals - TEXAS CITRUS MITE (Eutetranychus banksi) infestations heavy on plumeria tree at Lanai City, Lanai. All leaves bronzed due to feeding damage. Infestations moderate on most backyard plantings of lablab and lima beans at Lanai City. (L. Nakahara). GREEN SHIELD BUG (Pulvinaria psidii) infestations moderate to heavy (15-20 per leaflet) on 15 Brassaia actinophylla (umbrella tree) at Keaukaha, Hawaii Island. (Mau). Light infestations of a WHITEFLY (Paraleyrodes naranjæ), GIFFARD WHITEFLY (Bemisia giffardi), and CLOUDYWINGED WHITEFLY (Dialeurodes citrifolii) collected on various backyard citrus trees at Lanai City, Lanai, by L. Nakahara October 14, 1976. Determined by S. Higa and J.W. Beardsley. These are new island records. A WHITEFLY (Paraleyrodes perseæ) also taken on citrus trees at Lanai City. (L. Nakahara).

Turf and Pastures - Infestations of a LEAFHOPPER (Carneiocephala sagittifera) heavy, 500 per 10 sweeps, on bermudagrass lawns at Hickam Air Force Base, Oahu. (Teramoto).

Beneficial Insects - Adults of a EULOPHID WASP (Aneristus sp.) reared from Saissetia coffeæ (hemispherical scale) on Tabernaemontana pentasticta (rosebay) collected at Hilo, Hawaii Island, by S. Matayoshi, September 24, 1976. Determined by S. Higa. This is a new island record. (Higa, Matayoshi).

Miscellaneous - Many adults of a LYGAID BUG (Nysius sp. near vinitor) were collected from light trap at Hilo, Hawaii Island. October 11, 1976. Collected and determined by J.W. Beardsley. This is a new island record. Previously taken on Portulaca oleraceæ (common purslane) from Oahu Island in 1970. (Beardsley). One EUROPEAN EARWIG (Forficula auricularia) adult was collected from feedlot grain near Ewa on Oahu Island, by R. Rice. September 21, 1976. Determined by J.W. Beardsley. This is a new island record. Previously reported from Maui, collected at 6,400 feet elevation during July 1975. (Beardsley, Rice).

LIGHT TRAP COLLECTIONS

	Date	Precip- itation (inches)	Type of trap	Crops
CALIFORNIA	57-92	BL	9	
	Bellota 10/12	BL	1	
FLORIDA	55-90	BL	2	
	Gainesville 10/15-21	BL	1	
KANSAS	Sublette 10/14,	I	1	
	10/18	BL	1	
MISSISSIPPI	Tribune 10/11, 10/18			
	Stonerville 10/15-21	.44	2BL	7

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

	<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Aleurocanthus woglumi</u> Ashby citrus blackfly	pupal	on limes from baggage	Los Angeles	Mexico	CA
<u>Diocalandra taitensis</u> (Guer.) Tahitian coconut weevil	adult	in sugarcane from baggage	Hawaii	Hawaii	USA
<u>Ips amitinus</u> Eichhoff a scolytid beetle	adult	in wood crates of textile machinery	Asheville	Germany	NC
<u>Kalotermes flavicollis</u> (Fabricius) a termite	adult	in wood crates of marble	Tampa	Italy	FL
<u>Leucoptera scitella</u> (Zeller) a lyonetiid moth	pupal	on apples in ship stores	Charleston	Italy	---
<u>Orthotomicus larius</u> (Fabricius) a scolytid beetle	adult	in wood crates of cargo	Baltimore	Finland	IN
<u>Otala vermiculata</u> (Muller) a snail	adult	on cargo container	Miami	Italy	FL

WEATHER OF THE WEEK ENDING OCTOBER 24

Reprinted from Weekly Weather and Crop Bulletin supplied by the National Weather Service, NOAA.

HIGHLIGHTS: Temperatures over most of the Nation averaged much colder than normal. The exception was the Far West where southern and central California, western Washington, and southwest Arizona were above normal. In the northern Plains many areas averaged more than 15 degrees colder than normal; the southeastern United States averaged as much as 10 degrees below the normal expectations. The greatest precipitation fell from east Texas to the eastern Great Lakes and from Georgia to New England. Snow was recorded from Montana to western New York. Strong winds, showers, and snow in the mountains began in the Pacific Northwest by the end of the week.

TEMPERATURES AND PRECIPITATION: On Monday morning snow was reported from Colorado through Nebraska and the Dakotas. The snow was mixed with rain in the southern portion and was increasing in area coverage. An early winter had moved into the Ohio Valley. The morning low temperature of 24 degrees at Dayton was the coldest temperature ever recorded so early in the season there. Other record lows included 27 degrees at St. Louis, Missouri, and 17 degrees at Toledo, Ohio. Combinations of rain, sleet, and snow fell during the day on the northern and central Plains, the upper Mississippi Valley and by late in the day was beginning in the eastern Great Lakes area. By Monday evening 3 inches of snow had accumulated at Buron, South Dakota; 2 inches at Trinidad, Colorado, and 1 inch at Redwood Falls, Minnesota. Rain fell south of the snow area from Oklahoma to the middle Mississippi Valley. Mostly clear skies prevailed in the eastern third of the country, except for southern Florida, where thunderstorms were reported.

Tuesday morning saw unseasonably cold air covering much of the Nation. In the East early morning readings dipped into the 20's from the central Appalachians to the mid-Atlantic coast breaking a number of low temperature records. Lows of 25 degrees at both Atlantic City, New Jersey and Roanoke, Virginia, and 23 degrees at Grand Junction, Colorado, were the lowest ever recorded so early in the fall. By late in the day rain had been reported in a band from the Texas coast into the western half of the Great Lakes region and was occasionally mixed with snow in parts of Michigan. Scattered showers were also present along the gulf coast and the south Atlantic coast. From the Pacific coast through the Rockies and into the Plains the weather was beautiful on Wednesday. Temperatures remained on the cool side with mid-day reading in the 40's and 50's. In much of the East the weather was decidedly unfavorable. Flash flood watches were posted along the rain drenched slopes and foothills from North Carolina to Pennsylvania. Gale warnings were flying along the Coast from southern New England to Virginia. Heavy thunderstorm activity occurred over the south Atlantic Coast States. The cause of it all was an intensifying low pressure center moving through the Atlantic States. Winter continued its grip on the central United States with another morning of record low temperatures as the cold air moved rapidly south behind the eastern storm.

Weather of the week continued on page 815.

SUMMARY OF INSECT CONDITIONS IN THE UNITED STATES - 1975
(Continued from page 785)

BENEFICIAL INSECTS

Highlights

Large scale releases of a CINNABAR MOTH and a FLEA BEETLE were conducted in Washington and Oregon to control tansy ragwort. LADY BEETLES were important in the control of aphids and other pests of wheat, alfalfa, sorghum, and other crops in Nevada, Oklahoma, Kansas, Alabama, and Arkansas. Various WEEVILS were released to control weed pests in Utah, Oklahoma, and Washington; one was a new State record for Kansas; another continued to improve its control in Florida. A BLISTER BEETLE and a SPIDER BEETLE were important as bee pests in Washington. An APHIDIID WASP controlled greenbug in Kansas. A EULOPHID WASP increased in Michigan and began control of cereal leaf beetle. Another EULOPHID WASP spread in Florida and controlled Mexican bean beetle. A BRACONID WASP is well established in Michigan to control the alfalfa weevil and had spread naturally into several Ohio areas. BRACONID WASPS were released in Florida to control pink bollworm and Caribbean fruit fly.

An ICHNEUMONID WASP was noted in Oklahoma populations of alfalfa weevil and is well established in North Carolina. A PTEROMALID WASP hyperparasite may be the cause of the decline of alfalfa weevil parasitism in Wisconsin. ALFALFA LEAFCUTTING BEE populations are still light in Nevada and Washington due to weather, predators, pesticides, and disease. BIGEYED BUGS, ANTHOCORID BUGS, and DAMSEL BUGS were important predators on various crops in Alabama, Illinois, and Arkansas. A FLOWER BUG was released against pear psylla in Washington.

Large scale releases of a CINNABAR MOTH (Tyria jacobaeae) larvae were made again in 1975 as part of a program to demonstrate the feasibility of using biological control agents to suppress Senecio jacobaea (tansy ragwort) populations in western OREGON and WASHINGTON. An estimated 437,000 larvae were gathered from Benton, Linn, and Coos Counties in Oregon for redistribution. Ten western Washington counties received a total of 183,000 larvae and 254,000 immatures was liberated in 16 western Oregon Counties. Over one million larvae have been released in the 2 State areas during the last two years. Available data indicated a good rate of establishment for the colonies released in 1974. Larvae were noted heavily defoliating tansy ragwort over three-quarters of a 30-acre field in Clark County, Washington, approximately 0.75 mile from the original release site.

A FLEA BEETLE (Longitarsus jacobaeae) collection and redistribution was conducted this year as an adjunct to the release program of a cinnabar moth (Tyria jacobaeae) through the joint efforts of the Oregon Department of Agriculture, Oregon State University, Washington State University, and the United States Department of Agriculture Biological Weed Control Lab at Albany, California. An estimated 6,750 adult beetles were collected in early October from Ft. Bragg, California. A total of 19 colonies of 250 adults each was released in OREGON by county: Benton 2, Lane 1, Linn 1,

Polk 1, Douglas 5, Columbia 1, Lincoln 2, Coos 3, and Curry 4. Three additional releases of 200 adults each were made in Tillamook County in late October from material collected from an established flea beetle colony in that county. A total of 4 colonies of 250 adults each was released in WASHINGTON by county: Clark 2, Lewis one, and Cowlitz one.

LADY BEETLES, Coccinella transversoguttata richardsoni, Hippodamia convergens (convergent lady beetle), and Hippodamia spp. in NEVADA were instrumental in maintaining or reducing infestations of Acyrtosiphon pisum (pea aphid) and A. kondoi (blue alfalfa aphid) on hay alfalfa to subeconomic levels. In some field areas, abrupt adult population increases were the result of a mass movement of the beetles to alfalfa with counts of less than one adult per sweep increasing up to 30 per sweep in less than a week. H. convergens was active in OKLAHOMA from mid-February through November. Numbers were heaviest in aphid-infested wheat and alfalfa in April and sorghum and alfalfa in August. Menochilus sexmaculatus adults were released in several areas of Payne County for aphid control. H. convergens was the most important lady beetle aiding in control of Schizaphis graminum (greenbug) on wheat and sorghum in KANSAS in 1975. H. convergens and Coleomegilla maculata in ALABAMA were the more important of the lady beetles occurring in heavy populations in cotton, grain, vegetables, and other areas in controlling aphids and other important pests. H. convergens was heaviest during early and mid-season in ARKANSAS. Numbers often decrease drastically in late summer when many go into aestivation. Some adults were observed as early as late January. Numbers were very heavy in late March when the temperature reached 80 degrees F. Numbers in green vegetation were light during the fall. Larvae were observed as late as mid-November.

A WEEVIL (Rhinocyllus conicus) was released in UTAH near Deer Creek Reservoir, Wasatch County, to aid in Carduus nutans (musk thistle) control. Approximately 820 adults were released in OKLAHOMA in 2 areas of Payne County in May and June for control of musk thistle.

In WASHINGTON, a WEEVIL (Ceutorhynchus litura) of European origin, imported to control Cirsium arvense (Canada thistle), was released in Benton County under cages and reproduced. The last information that was received indicated that larvae were developing.

A WEEVIL (Neochetina eichhorniae), imported from Argentina and established in FLORIDA in August 1972, has reached a control level of 50 percent and continues to improve in many Eichornia crassipes (waterhyacinth) sites.

A PUNCTUREVINE SEED WEEVIL (Microlarinus lareynii) was found in KANSAS on puncturevine near Hardtner, Barber County, August 12, 1975. Collected and determined by D.C. Arnold. This is a new State record.

A BLISTER BEETLE (Meloe niger) continued as a pest in Nomia melanderi (alkali bee) beds in the Lowden and Touchet area, Walla Walla County. Controls reduced counts and average bee bed infestations from 19 percent in 1973 to 10 percent in 1974, to 5 percent in 1975. M. niger has not been found infesting alkali bees in Yakima County. It has been found infesting Anthophora urbana urbana (a leafcutting bee) in Walla Walla County for a new host record.

A SPIDER BEETLE (Ptinus californicus) was found throughout the Columbia Basin area of WASHINGTON in 1975. In 1974 it was known only from an isolated area of Franklin County. A major factor in the spread of this nest destroyer of Megachile rotundata (alfalfa leafcutting bee) is the widespread importation of bee boards from Idaho.

AN APHIDIID WASP (Lysiphlebus testaceipes) was of major importance in KANSAS, in Schizaphis graminum (greenbug) control on sorghum during 1975.

A EULOPHID WASP (Tetrastichus julis) returns from the 1975 parasitoid recovery in MICHIGAN suggest a continued increase for this cereal leaf beetle (Oulema melanopus) larval parasitoid. Of 13 sets of samples from the same township and sections in 1974 and 1975, eleven were generally higher in parasitism in 1975. The overall parasitism rate for the 133 samples returned by extension agents (weighted by sample size) was 26.9 percent, up from 15.6 percent in 1974. Recoveries made in townships with no previous release sites indicate continued dispersal of T. julis. In short, although they are not the only cause of current general reduction in the beetle population, evidence mounts that T. julis is beginning to exert an effect. After finding no evidence in FLORIDA during March and April that a EULOPHID WASP (Pediobius foveolatus) had successfully overwintered in the Gainesville area, Alachua County, releases were made to control Epilachna varivestis (Mexican bean beetle) the last week of April and the first half of May. A total of 3,000 adults were released at 27 localities, within 35 miles of Gainesville. An additional 4,000 were released in 2 lots at Quincy, Gadsden County, about mid-May. Initial Mexican bean beetle populations at both Gainesville and Quincy were lighter than in 1974, perhaps due to releases made in late May of 1974. During 1975, parasitized beetles at Gainesville increased rapidly. After mid-June few fourth-instar larvae could be found, and most second and third-instar larvae were parasitized. During August, Mexican bean beetle decreased to a non-detectable level in Alachua, Bradford, Union, Levy, and Gadsden Counties. A survey showed a rapid northward spread but southward dispersal was much slower, and no Pediobius foveolatus was found south of Belleview, Marion County, FLORIDA, 45 miles south of Gainesville and only 25 miles south of the most southern release made in May.

In MICHIGAN the efforts made in 1973 and 1974 to subcolonize a BRACONID WASP (Microctonus aethiops), parasitoid of adult Hypera postica (alfalfa weevil), have been successful, with M. aethiops being recovered from every adequate sample of adult weevils. Parasitism ranged 1-67 percent in the submitted samples, with an overall statewide peak rate of close to 30 percent. There is no further need to subcolonize Microctonus aethiops in the Lower Peninsula since it appears to have a foothold in every area sampled. Following the unexpected discovery of this parasitoid in Hancock County, OHIO, in late March, additional discoveries were made during May and June in Wyandot, Wood, Henry, Putnam, Seneca, Sandusky, and Auglaize Counties. Parasitism rates ranged 0.03-26.6 percent with the latter on May 28. The following are previously unreported new county records: Recovered from Hypera postica (alfalfa weevil) adults collected October 22, in Allen, Van Wert, and Crawford Counties and November 6, Ottawa and Erie Counties. Collected and determined by J.K. Flessel. This natural

establishment in northwestern Ohio is believed to be the result of dispersal of parasitoids and parasitized weevils from southern Michigan, where Microctonus aethiops has been present since 1969. A first recovery was established for Clark County, when M. aethiops was recovered at a release site in 10.4 percent of the adult alfalfa weevils collected May 20. Parasitism in Wayne County, where M. aethiops was first recovered in 1973 reached a maximum of 30.2 percent on May 26.

In southern FLORIDA 2 million BRACONID WASPS, Bracon kirkpatricki and Chelonus Blackburni, were released during 1975 by the United States Department of Agriculture to help control Pectinophora gossypiella (pink bollworm). A BRACONID WASP (Biosteres longicaudatus) has been cultured and released statewide in an attempt to control Anastrepha suspensa (Caribbean fruit fly). During the 12 months after extensive releases of this braconid in Dade County (approximately 800 locations) about 38,000 adult Caribbean fruit flies were trapped during 1974 and 1975 in McPhail traps, a decrease from the annual average number trapped 1956-1972 of 66,000 flies. The previous low for any one year was 46,000 flies in 1969. Parasites have been recovered from Caribbean fruit fly-infested fruit throughout Dade County. Apanteles flavipes (a braconid wasp) parasite of Diatraea saccharalis (sugarcane borer) continued to increase in 1975.

An ICHNEUMONID WASP (Bathyplectes curculionis) was reared from OKLAHOMA Hypera postica (alfalfa weevil) larvae in April and May. Larvae collected in April ranged 1-67 percent parasitized and larvae collected in May ranged 14-100 percent parasitized. In NORTH CAROLINA, samples of alfalfa weevil larvae from fields in Clay, Haywood, Buncombe, Yadkin, Surry, Rockingham, Wake, Rowan, Alleghany, and Lincoln Counties April 16-24 revealed infestation levels from 0.4 percent in Rockingham and Buncombe Counties to 64.5 percent in Rowan County, apparently well established over the entire State. In WISCONSIN, studies made late in May indicated a continuing decline in parasitism of Hypera postica (alfalfa weevil) by B. curculionis which may be due to hyperparasitism. A PTEROMALD WASP (Sceptrothelys grandiclava), a hyperparasite of B. curculionis, was collected in May in Dane and Rock Counties for a new State record.

ALFALFA LEAFCUTTING BEE (Megachile rotundata) populations in NEVADA in the major alfalfa seed producing areas of Humboldt and Pershing Counties were at about 1974 levels, but these levels were below those of several years ago. One factor preventing a population increase was the incidence of Ascosphaera apis (chalk-brood) which was more prevalent than in 1974. An estimated 45-percent mortality of bee larvae in Pershing County and 25 percent in Humboldt County occurred in 1975. Other factors causing mortality included parasites, predators, nest destroyers, and pesticides. Application of certain of the latter on both hay and seed alfalfa for aphid control caused considerable bee kill in Pershing County. In WASHINGTON, populations were below average because of an exceptionally cool June, pesticide kills, and parasites and nest destroyers.

The ALKALI BEE (Nomia melanderi) seasonal life history in WASHINGTON was similar to 1973 and 1974; the first adult male was found June 4. Populations for the 1976 growing season are lighter than in 1975 in the Lowden and Touchet area, Walla Walla County, due to poor weather conditions for bee flight during the early part of the summer.

A BIGEYED BUG (Geocoris punctipes) and ANTHOCORID BUGS (Orius spp.) were perhaps the more important species in parasitizing eggs and larvae of Heliothis zea (bollworm) and H. virescens (tobacco budworm) on cotton, corn, grain sorghum, tomatoes, soybeans, snap beans, and ornamentals in ALABAMA.

A MINUTE PIRATE BUG (Orius insidiosus) was partially responsible in controlling soybean thrips during the month of June in ILLINOIS. Adults were observed as early as April 18 in northwest ARKANSAS and remained active throughout the warm season.

DAMSEL BUGS (Nabis spp.) and BIGEYED BUGS (Geocoris spp.) were the two heaviest predators in soybeans, in ARKANSAS. Almost 60 percent of the cropland in the State is in soybeans. These species became active in late April and remained active throughout the warm season.

AN ANTHOCORID BUG (Anthocoris melanocerus) was brought from north-central WASHINGTON to control Psylla pyricola (pear psylla) and released at 12 sites in this south-central area.

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

Highlights

CARIBBEAN FRUIT FLY continued to be a severe pest of dooryard citrus fruits in Florida. CEREAL LEAF BEETLE damage was expected to increase in Maryland. In Pennsylvania, it was a serious pest on small grains. Infestations were economic in western New York. Cereal leaf beetle was found for the first time in Vermont. The EUROPEAN CHAFER State quarantine is due to be extended because of finds outside of the controlled area in Ohio. GIANT AFRICAN SNAIL was eradicated from Florida. Three GRASSHOPPER outbreaks were found by mid-July in New Mexico. Over 100 males of GYPSY MOTH were trapped for the first time in an uninfested county of Illinois. Multiple catches indicative of established infestations were found in new counties in Michigan. Activity increased significantly in Maryland. Controls for gypsy moth were excellent in Pennsylvania and Rhode Island. Control efforts contained the spread of JAPANESE BEETLE in Alabama. MEDITERRANEAN FRUIT FLY and ORIENTAL FRUIT FLY were detected in California. PINK BOLLWORM was found to be still present in Nevada. POTATO TUBERWORM has been eradicated in Michigan. RED IMPORTED FIRE ANT increased in Arkansas and damaged citrus in Florida. WEST INDIAN SUGARCANE BORER has become a serious regulatory problem in Florida.

CARIBBEAN FRUIT FLY (Anastrepha suspensa) continued to be a severe pest of dooryard citrus fruits such as calamondins, kumquats, and occasionally some late season ripe oranges and grapefruit in

FLORIDA. Fumigation and other losses associated with shipment of grapefruit to noninfested citrus States and countries were in excess of 4 million dollars. Caribbean fruit fly was also severe on many other dooryard tropical fruits in Dade County, and was generally a pest of dooryard fruits in the southern half of the State.

CEREAL LEAF BEETLE (*Oulema melanopus*) was detected in trace numbers in 3 small grain fields in Walworth County and 3 fields for a new county record in Kenosha County, WISCONSIN. Only one larva per field was found except for one Kenosha County field where 3 larvae were detected. Samples consisted of 1,500 sweeps per field, primarily in oats. Damage was minimal to winter wheat in KENTUCKY. Eggs ranged 0-2.6 per square foot in the central area. Some adults were found in south-central and north-central fields. The heaviest counts ranged 4-7 adults per 100 sweeps in a few fields during early May. Populations increased slightly in 1975. In VIRGINIA, new county records were reported in Washington, Caroline, King George, Prince William, and Fairfax Counties.

Cereal leaf beetle adults or larvae have now been recovered from all counties in MARYLAND except in Wicomico, Talbot, Somerset, and Worcester. A total of 8 new county records was reported. Economic population levels on oats were encountered in Garrett, Allegany, Washington, and parts of Frederick and Carroll Counties during 1975; the first 3 counties have been the most heavily infested to date. Egg laying started in mid-May in the western counties and continued into July in the central counties. Eggs ranged 11.9-42.0 per square foot on 3 western farms. Controls were required on several hundred acres in these same counties in June. The larval parasitoids, *Tetrastichus julis* (a eulophid wasp) and *Diaparsis* spp. and *Lemophagus curtus* (ichneumonid wasps) were released in Allegany, Garrett, and Washington Counties. The egg parasite, *Anaphes flavipes* (a mymarid wasp) was recovered in Baltimore and Washington Counties for the second successive year and for the first time in Allegany, Cecil, Garrett, Harford, Howard, and Prince Georges Counties. Egg parasitism on 3 farms in the central area ranged 45-72.5 percent. Damage in 1976 is expected to increase slightly in the western area and increase significantly in other areas east of Washington County. This increasing trend is expected to continue until the introduced parasitoids become better and more widely established.

Cereal leaf beetle was found on oats throughout DELAWARE during late June and early July but never as a serious pest. Finds in Kent and Sussex were new county records. Sussex, Mercer, and Salem Counties were reported as new county records in NEW JERSEY. Cereal leaf beetle has essentially spread over all of PENNSYLVANIA and is a serious pest of small grain crops. Early adults were detected in mid-April, the largest number of eggs and larvae was found from mid-May to mid-June, and practically all activity had ceased by mid-July. The south-central counties were especially hard hit, with counts peaking at 0.36 adult per sweep and 211 eggs and 23 larvae per 10-foot row. The northwestern counties also had moderately heavy populations peaking at 0.38 adult per sweep and 47 eggs and 34 larvae per 10-foot row.

Cereal leaf beetle continued to spread across NEW YORK during 1975. New infestations reached the Hudson River via Saratoga County and

the St. Lawrence Seaway via Jefferson County. Other new counties were Lewis, Fulton, Greene, Columbia, Delaware, Chenango, Cortland, Cayuga, Tioga, Broome, and Niagara. The first reported adult activity and egg laying were from Livingston County on May 13 and Tompkins County May 14. The first observed egg hatch was in Cayuga County May 21 and summer adults were active in early July. A new parasite insectary was established in the town of Enfield in Tompkins County where Tetrastichus julis, Diaparsis spp., and L. curtus were released. These parasites were also released in Allegany, Delaware, Livingston, Onondaga, Ontario, Otsego, and Steuben Counties. Recovery in Broome, Onondaga, Seneca, Steuben, Tioga, Wayne, Yates, and Ontario Counties of the egg parasite, Anaphes flavipes and in Ontario and Livingston Counties of larval parasites indicated establishment of released parasites. Economic levels required control measures in the western counties. The most eastern area of economic activity was in Tompkins County. Activity was greater on oats in the valleys than on hilltops. Most fields in central New York had about one larva per square foot. MASSACHUSETTS had one new county record in Franklin County. Cereal leaf beetle was found for the first time in VERMONT in Bennington County on oats for a new State record. The infestation was very light with only an occasional larva found.

EUROPEAN CHAFER (Amphimallon majalis) was present at 2 locations in Cuyahoga County outside of the regulated area in OHIO. Over 200 adults were taken in one trap. A total of 250 chemical traps were set around railroad yards and other selected sites in the northeastern area. Some extension of the State quarantine is expected.

GIANT AFRICAN SNAIL (Achatina fulica) was officially declared eradicated from Dade and Broward Counties, FLORIDA, on April 13, 1975. No specimens had been found in the Miami and Hollywood areas for 2 years.

Three GRASSHOPPER outbreaks were noted July 18 near Mora and Rio Arriba Counties, NEW MEXICO, involving 50,000 acres; 100,000 acres of private, State, and Federal lands were involved by July 3. Late season populations were noted south of Roswell, Chaves County, in September and continued through the first of November. Fall surveys found about 458,000 potentially economic acres. Although grasshopper outbreaks in UTAH were below normal and hatching was delayed by the late stormy spring weather, ranchers, farmers, and homeowners in many counties applied controls to protect alfalfa, small grains, and gardens. Cooperative control was necessary to protect 10,368 acres of rangeland in the Hill Creek and Willow Creek areas of Uintah County, and 3,000 acres at 9,000-foot elevation in Ephraim Canyon, Bad Valley, Flan Valley, and Jap Valley, Sanpete County. The adult grasshopper surveys indicated probable 1976 outbreaks on 39,000 acres of private range, 9,000 acres on forest service land, 3,500 acres of Bureau of Land Management range or a total of 51,500 acres.

The dominant species on eastern OREGON rangelands were Oedaleonotus enigma and Melanoplus sanguinipes. Overall, 1975 was a year of light populations and delayed development by about 21 days. No heavy or serious populations were encountered and the 12,680 infested acres in Wallowa and Malheur Counties were considered marginal. Camnula pellucida became serious enough to control on

privately owned land in the Mud Lake area of Harney County and in the Warner Valley of Lake County. Areas where future Camnula pellucida outbreaks were most likely to occur are in infested meadows in Harney, Lake, and Klamath Counties.

Grasshoppers remained light throughout WASHINGTON; 1975 counts showed 56,900 acres with economic numbers, slightly over 1974 levels, when only 35,000 acres of comparable status were found. Large populations of Camnula pellucida infested the lower meadows of the Pine Creek area north of Omak, Okanogan County. Populations are expected to be heavier during 1976 due to the late fall, favoring a heavy egg count. Populations were down considerably in IDAHO. Mainly Melanoplus sanguinipes, C. pellucida, and O. enigma were present. Only small localized populations required treatment during 1975.

Grasshopper egg hatches in OKLAHOMA began the second week of April in the southwest counties and the following week in most other areas. Nymphal surveys in May showed economic populations developing in several southwestern, west-central, and northwestern counties. Controls were applied to 24,155 acres of rangeland in Roger Mills County in June. Fall surveys showed 1,075,000 acres of rangeland in 27 counties in the Panhandle, northwestern, west-central, east-central, southwestern, south-central, and southeastern areas were economically infested. Dominant species were Ageneotettix deorum, Drepanopterna femoratum, Amphitornus coloradus, Boopedon nubilum, Mermiria maculipennis, Melanoplus occidentalis, M. bivittatus, M. packardii, Phlibostroma quadrimaculatum, and Hesperotettix speciosus.

In NEBRASKA, Melanoplus differentialis and M. femurrubrum ranged 10-15 per square yard in grassy field margins and roadside ditches in mid-July in the central crop district. Fall surveys indicated heavy populations in the northeast, central, and southeast crop districts. The potential for damaging infestations in 1976 was high, especially since fall egg laying conditions were excellent. The predominant species in the east were M. femurrubrum, M. differentialis, and M. bivittatus. In rangeland, A. deorum, Aulocara elliotti, and Trachyrachys kiowa were the heaviest. About 51,000 acres in SOUTH DAKOTA were economically infested by M. sanguinipes, M. packardii, and M. femurrubrum: 36,000 in Fall River County, 7,000 in Dewey County, and 8,000 in Ziebach County.

Egg development in NORTH DAKOTA as of May 16 showed up to 60 percent of the eggs in the west in eyespot stage. Up to 14 percent were nonviable at hatching time due to desiccation (4 percent) and predators (10 percent). First hatch of the season occurred May 23 in Richland County. A late, cold, wet spring resulted in a late main hatch around June 13. Low temperatures retarded hatching and nymphal development during June. By June 20, minimal damage occurred on rangeland and marginal areas of cropland in the southeast. Small grain crops being generally ahead of grasshopper development in most areas escaped major damage, except in west-central and southwest districts where the small grain was late. Some damage occurred to rangeland and winter rye and winter wheat fields late in the season. The adult survey showed large increases in populations in the west-central and northwest districts. Populations decreased in the north-central, southwest, south-central, and east-central districts. Range surveys indicated

about 197,560 acres economically infested in Billings County, 64,000 in Dunn County, 77,500 in Golden Valley County, 284,200 in McKenzie County, and 13,800 in Slope County. The dominant cropland species were M. bivittatus, M. differentialis, M. sanguinipes, M. packardii, and M. femurrubrum. In MINNESOTA, the areas of economic populations of 8 or more grasshoppers per square yard remained virtually unchanged. About 130,200 acres of forage crops had economic infestations, an increase of 200 acres over 1974 levels. M. femurrubrum and M. bivittatus continued as the most important species.

GYPSY MOTH (Lymantria dispar) was found in ARKANSAS for the first time when 2 male moths were taken in a pheromone trap in Conway County, August 21. This species was not believed established because neither eggs nor females were found. During early July, 7 moths were taken in a trap in the northeast Chicago area of Cook County, ILLINOIS. During July and August, 191 adult males were trapped in a one-square-mile area near Palos Park, Cook County. No larvae, egg masses, or females were found. Approximately 10,000 disparlure traps set throughout OHIO in 1975 resulted in 3 positive finds. Two moths were taken in a trap set in northern Washington County; a single moth was collected at Lorain, Lorain County, and 2 moths were trapped at Willoughby, Lake County. The Washington and Lake County finds were new county finds. No signs of egg masses have been found to date at any of the 3 locations.

In WISCONSIN, 3 gypsy moth males were trapped for first finds at Appleton, Outagamie County, one each at Elkhart Lake, Sheboygan County, and Manitowoc, Manitowoc County, and 2 in a Federal car servicing the above traps. A total of 65 adults was recovered from 35,000 traps at a known infested site in MICHIGAN where annihilation trapping experiments were conducted; 174 male moths were recovered from about 16,000 detection traps. Scattered moths were taken in Allegan, Berrien (a first find for 1975), Clare, Gratiot, Mecosta, Saginaw, and Washtenaw Counties. Multiple catches indicative of established infestations were made in Isabella, Midland, and Montcalm Counties.

Gypsy moth was found for the first time in one new county of GEORGIA. Only one moth was collected in FLORIDA during 1975. The collection was made at a campground east of Milton, Santa Rosa County, on September 9. No more moths were detected in the area despite increased trapping and surveillance. This was a first time find for Santa Rosa County. A collection of 7 male gypsy moths was made during 1975 from sexlure traps in NORTH CAROLINA, including one new county find. Male moth catches were exceedingly sparse this summer in VIRGINIA. Concentrated trapping in Rockingham County aimed at eradicating a suspected incipient population near Dayton, Rockingham County, produced only one male moth. The following numbers of males were collected in these counties: Accomac 4, Northampton 2, Isle of Wight one, Middlesex one, Suffolk 2, York one (new find), Fairfax 3, Rockingham one, Loudoun 5, King William one (new find), Fauquier 2, Smyth one, Greenville one (new find), Brunswick one (new find), Lancaster one, Mathews 6, Clarke 2, Frederick one, and Virginia Beach one.

Gypsy moth activity was light in MARYLAND but increased significantly over 1974. Spring 1975 egg mass surveys revealed 87 positive sites in Cecil County and one in Harford County. Eggs hatched the first week in May. Limited spraying for larval control was undertaken in several areas in Cecil and Harford Counties by mid-May. Pupae appeared between June 18 and July 15, peaked the first week in July, and were found as late as July 23. Egg laying was observed July 16-29 in Cecil and Harford Counties. Males were trapped during July and August from Dorchester, Frederick, Howard, Kent, Montgomery, Somerset, Wicomico, Worcester, Carroll, Baltimore, Harford, and Cecil Counties. Only southern counties did not have positive finds. Pimpla turionellae (an ichneumonid wasp) was reared and released in several north-eastern areas.

The 1975 PENNSYLVANIA spraying program for gypsy moth began May 19 and was concluded June 11. A total of 29,982 acres in high-use areas was treated in 13 counties. Control was, in most cases, excellent. Noticeable defoliation occurred on 162,175 (heavy) and 155,075 (moderate) areas, a one-third reduction from 1974 levels. Reduced defoliation was noted especially in Carbon, Centre, and Luzerne Counties. Defoliation increased in Clinton, Chester, Columbia, Dauphin, Lancaster, Lebanon, Lycoming, Montour, Northumberland, and Union Counties. A gypsy moth damage appraisal was made late in 1974, on areas of over 5 acres having over 15 percent mortality. A total of 8,722 acres was surveyed in 5 eastern counties. There were 963,407 dead trees, representing 3,814,493 cubic feet of pulpwood and 2,996,219 board feet of sawtimber.

Gypsy moth eggs were first reported in Providence County, RHODE ISLAND, on May 6. By May 22 a general egg hatch had occurred statewide. By May 28, there was noticeable feeding in infested portions of the northern counties. Generally, third and some fourth instars were seen on June 4. Controls on about 5,000 acres were effective in reducing damage and migration in the heavily infested areas. By June 13, fourth instar larvae occurred. By June 26, fifth instars were general plus some early pupation. Adults first emerged on July 14 with egg laying by July 24. A total of 435 acres was defoliated as compared with 2,120 acres of defoliation in 1974.

Gypsy moth remained light in VERMONT with noticeable defoliation at one site. A 15-acre infestation in North Hero State Park, Grand Isle County, on oak and other associated hardwoods showed 15-16 percent defoliation. This species continued to be very difficult to find in NEW HAMPSHIRE. It has been well below economic levels for many years and is now considered rare throughout the State. Populations on trees were very light in MAINE in 1975. Small numbers of larvae were evident over most of southern and central Maine and in a number of local spots outside of the quarantine boundary. Noticeable defoliation occurred on 110 acres at Brownfield, Oxford County.

One JAPANESE BEETLE (Popillia japonica) in NEBRASKA was taken in a baited trap July 28 in Hamilton County. Adults were collected in IOWA (52 in lure traps and 3 hand collected) in a residential area of Cedar Rapids, Linn County, during the summer. Fewer

Japanese beetles were collected in 1975 than in 1974. Populations were light to moderate in ILLINOIS on field corn in Iroquois County during the week of July 7. Silk feeding caused light economic damage in at least 2 fields. Silks were 25 percent damaged with as many as 15 (averaged 3-4) adults per silk. Soybean fields in this county during the week of July 7 showed extensive, but noneconomic, leaf feeding. The most heavily infested areas had up to 10 beetles per foot. Adults were trapped for the first time in Crawford, Ripley, and Franklin Counties. In WISCONSIN, about 400 traps were located in and around Kenosha, Kenosha County, where beetles were previously caught. A total of 6 beetles was caught, 5 at the Kenosha site and one "hitchhiker" near Janesville. In OHIO, 600 traps were used to survey the non-regulated areas of extreme west-central OHIO. One positive find occurred in the city of Greenville, Darke County.

Strict surveys and control efforts in ALABAMA contained Japanese beetle to known locations in Lee, Jefferson, Winston, Cleburne, Jackson, and Calhoun Counties. In GEORGIA, adults were trapped for the first time in Pike, Morgan, and Walker Counties.

The first Japanese beetle adults in VIRGINIA were reported from Isle of Wight County on hollyhock on June 13. Adults were feeding on snap beans in the Independent City of Virginia Beach by June 9 and in clusters on roses by June 16. The first adults found in Fluvanna County were feeding on grapes, sassafras, and blackberry vines on June 16. Light populations were noted on thistle in Rockingham County June 18 and in Blacksburg and Shenandoah Counties June 25. Damaging adult populations emerged following light rains in Montgomery County after July 5, about 14 days later than usual. The population in this county was not so heavy as larval counts had indicated.

Damage and larval populations in MARYLAND were as spottily moderate to heavy in 1975 as in 1974. Damage was not significant in the spring, but injury was observed in home lawns and commercial sod from late July to early September. Infested sod greatly declined over the past 3 years in commercial acreage but has remained stable in home lawns. Adults in several areas caused 60-100 percent defoliation. Problems could be very serious in the next 3-4 years. Adult feeding injury to ornamentals was very heavy in several counties in July and August. The general trend statewide was moderate to heavy injury similar to that occurring in 1973-1974.

Japanese beetle adult emergence in RHODE ISLAND first occurred on June 16 in Providence County and became heavy in the northern counties by July 11. This species ranged 5-10 per row foot of field corn on August 8 in Newport County. By August 29, early grub damage was seen in scattered locations statewide and was very evident by September 19. Severe damage occurred on golf course fairways. Moderate to heavy numbers on commercial wine grapes in Cheshire County, NEW HAMPSHIRE, damaged fruit and reduced yield.

One male of MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) was trapped at Venice, Los Angeles County, in CALIFORNIA on September 25, 1975. Larvae were detected near the original site on October 7. Additional males, females, and larvae were found up to November 17 in this county. A total of 77 adults was trapped on

39 properties. Larvae were found on 12 properties. Beginning October 31, a total of 109,214,472 sterile flies was released up to December 31, 1975, in the 28-square-mile treatment area.

MORMON CRICKET (*Anabrus simplex*) populations in NEVADA were slightly below those of 1974. Economic infestations developed in the Sulphur Spring Range, Elko County, where 22,000 acres of rangeland averaging 3 crickets per square yard were treated in mid-July with excellent results. Small, localized populations in other areas of Elko County and in areas of Eureka, Lander, Pershing, and Washoe Counties were below economic levels or confined to very small acreages; no controls were applied.

One male of ORIENTAL FRUIT FLY (*Dacus dorsalis*) was trapped in CALIFORNIA at National City, San Diego County, on September 2 and 11, 1975. No other adults or larvae were found.

PINK BOLLWORM (*Pectinophora gossypiella*) trapping in NEVADA was initiated in Pahrump Valley, Nye County, cotton fields after 5 years to determine if the pest was still present in the valley. A total of 102 male adults was taken in the 5 gossypure traps set from August 12 to October 3. Adults were collected in pheromone traps in 9 counties of ARKANSAS. These moths were collected near Fayetteville in Washington County where fewer than 5 acres of experimental cotton are grown. No survey has been conducted in the area since 1956 when heavy populations were found. The population was kept very light in southern FLORIDA by the release of 2 million braconid wasp parasites and several million sterile pink bollworm adults during 1975.

POTATO TUBERWORM (*Phthorimaea operculella*) quarantine in MICHIGAN of chipping plants, tomato hothouses, and out-of-State potato shipments has resulted in the elimination of all known infestations.

RED IMPORTED FIRE ANT (*Solenopsis invicta*) was reported in new counties in TEXAS: Jim Wells, Kleberg, Frio, Refugio, Goliad, Williamson, Lee, Milam, Bell, Leon, and Caldwell. Infestations increased in south-central ARKANSAS since organized control measures were discontinued. Mounds ranged 64-112 per acre in Ashley County by April 11.

Red imported fire ant was found in 4 new counties in FLORIDA: St. Lucie, Martin, Palm Beach, and Broward. Only Monroe County has not become infested. Some aerial application was done in approved noncoastal counties. Some ground application was done in the coastal counties but not so much as in past years, because the property owners had to pay for the chemical control and the application. This species became an unusual problem in Florida in November on young citrus in localized areas of 4,000 acres near Ft. Pierce, St. Lucie County. Heavy fertilization of trees caused bark splitting and sap flow, resulting in the ants feeding on sap and building sand cover over bud unions and in limb crotches. Locally heavy chewing on the bark caused dieback of the twigs or killed the tree. Similar damage was noted in early December on 25 percent of 1,000 acres of young citrus trees at Merritt Island, Brevard County.

Red imported fire ant infested three new counties in GEORGIA: Jefferson, Hancock, and Greene. In NORTH CAROLINA, imported fire ants detected in Pender and Bladen Counties were reported as county records and represented expansions of the infestation.

WEST INDIAN SUGARCANE ROOT BORER (Diaprepes abbreviatus) has become a serious regulatory problem in FLORIDA. Much time was spent inspecting ornamentals shipped from outside of the continental United States. Eradication efforts in Broward County nurseries have gone well, and no specimens were collected in this county since October 7. No specimens were found after June 16 in one of the nurseries which had been infested. The principal existing population remains in the Apopka area of northwestern Orange County. During March, a few larvae and adults were collected from citrus a few miles from the Apopka area in western Seminole County, a new county record.

Weather of the week continued from page 802.

The storm continued northward through New England on Thursday; rain and flooding were widespread. By mid-day the storm moved out of New England and most of the rain abated. However, snow squalls began forming in western New York as the strong wind moved over the Lakes and was lifted by the Adirondacks. Cold air moved all the way to the Gulf of Mexico and many record low temperatures were set: Mobile, Alabama, 37 degrees; Meridian, Mississippi, 29 degrees; and Baton Rouge, Louisiana, 36 degrees. Late in the day scattered showers and a few thunderstorms developed over Arizona and southern California. Gale force winds continued over the Great Lakes on Friday. Flooding and beach erosion resulted from the 12-foot high waves along the eastern shorelines. Warmer air from the Gulf of Mexico began to invade the southern Plains. The warm moist air gave rise to shower activity in northwest Texas, Oklahoma, and southern Arkansas. Scattered showers and thundershowers occurred from southern California into New Mexico.

Cold weather continued over the northern United States Friday and spread deeper into Southeast. Record low temperatures included: Atlanta, Georgia, 33 degrees; Mobile, Alabama, 40 degrees (coldest for the date since 1898). In the cold area, Spencer, Iowa, recorded 11 degrees breaking the old record of 17 degrees for the date. Scattered showers with isolated thundershowers fell on Saturday from the southern Plains into the middle Mississippi Valley and Ohio Valley. Showers were again reported in Arizona to New Mexico. Snow fell in the northern portion of lower Michigan and in eastern South Dakota. Temperatures reversed themselves in the southern Plains and soared to near the 80 degree mark in portions of Oklahoma and Kansas. Cold weather continued in the North and East. The precipitation area increased rapidly on Sunday. Precipitation in one form or another fell from southwest Texas to New York, south through the middle Atlantic States, north to Nebraska and from Minnesota through the Great Lakes where snow was accumulating. An intense fall storm was approaching the Pacific Northwest bringing with it strong winds, numerous rainshowers, and snow at higher elevations.

CONTRIBUTORS

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New Records of Utetheisa pulchella (L.), an Old World species,
in the Western Hemisphere and Characters for its Recognition
(Lepidoptera: Arctiidae)

E.L. Todd 1/

During a trip to St. Lucia in 1975 I studied moths in the collection formed by Dr. Graham Mitchell, Windward Island Banana Grower's Research Station at Roseau, St. Lucia. In the collection were several specimens of Utetheisa pulchella (Linnaeus), an arctiid native to the Eastern Hemisphere, collected by Dr. Mitchell near Reduit Beach, St. Lucia. Later I collected the species at Reduit Beach and also on the island of Antigua. A search of the unidentified miscellaneous material in the U.S. National Museum (USNM) revealed four other examples, two collected near Micoud, St. Lucia, in August 1963 by Oliver Flint of the Smithsonian Institution and two others captured at Mount Washington and Union (one locality), St. Croix, December 29, 1967, by William Cantelo and the USDA staff. I did not collect this species on St. Croix during July 1967, in spite of operating four large, walk-in type, blacklight traps, each located in a different ecological area, and collecting at a blacklight and sheet at eight other localities. At the same time, the staff of the USDA Agriculture Experiment Station at Kingshill were operating 243 other competing blacklight traps on the island, but their catches were not sorted for Utetheisa.

A single female specimen in the British Museum labeled from St. Vincent and collected by J.J. Walker is apparently the first specimen recorded (Hampson, 1901) from the Western Hemisphere. The specimen may be correctly labeled, but the species is not known to have been collected on St. Vincent since that time. Another specimen collected at Ponce, Puerto Rico, February 2, 1927, by Donald Fraser (Forbes, 1930) was thought to be a single accidental introduction. The first established population of U. pulchella in the West Indies was reported (Enrico and Pinchon, 1969) from Martinique. The first specimen was taken in August 1963 at Pointe du Marin near Sainte-Anne. Those authors also report taking a specimen in flight on the afternoon of December 28, 1967, on the island of St. Barthélemy. This species was not collected on Dominica during the Bredin-Archbold-Smithsonian biological survey, 1965-1967. Mr. F. Chalumeau, Institut National de la Recherche Agronomique, Petit-bourg, Guadeloupe, a French entomologist familiar with this species, has informed me through correspondence that U. pulchella does not occur on Guadeloupe. U. pulchella has been known to occur in Brazil for many years. The first published report (Carvalho and Carvalho, 1939) listed the species from Pernambuco. Two examples from Brazil studied by Mr. William D. Field, Smithsonian Institution, in 1941 are in the USNM. One specimen is from Tapera (State unknown, there are thirty-two localities by that name in Brazil), April 16, 1928, and the other is from Cuiaba, Matto Grosso, no date. Mr. Evoneo Berti Filho of São Paulo informed me in personal conversation that he has taken the species in the vicinity of São Paulo. U. pulchella was reported from the Brazilian States of Paraíba and Pernambuco (Silva et al., 1968).

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Exactly when or how Utetheisa pulchella was introduced into the West Indies is unknown. We do know that it now occurs on at least five islands, Martinique, St. Lucia, Antigua, St. Barthélemy, and St. Croix. The presence of Utetheisa pulchella in the West Indies, especially on the last three islands listed, increases the possibility of rapid dispersal into the Greater Antilles, Mexico, and the United States. The operations of airlines and cruise boats, the prevailing easterly winds, and frequent tropical storms coupled with the known tendency of the species to produce large migratory populations (Herbulot and Viette, 1951) favor its continued dispersal.

Utetheisa pulchella has been reported to feed on "Tamarix" (Herbulot and Viette, 1951), Myostis and "evergreen Caucasian comfrey" (Kettlewell, 1963), possibly Symphytum caucasicum Bieberstein, Crotalaria juncea (Linnaeus) (David and Kumaraswami, 1960) reported as "sunnhemp" (Ghosh, 1940), and Cassia sericea Swartz, a junior synonym of Cassia uniflora Miller, (Silva et al., 1968). The common native American species, Utetheisa ornatrix (Linnaeus), feeds mainly on various species of Crotalaria, but it will attack many other legumes (Forbes, 1930). The two species, pulchella and ornatrix, are not known to have any parasites in common; therefore, parasites of the American species may not effectively control or reduce population size of U. pulchella in the Western Hemisphere.

Utetheisa pulchella, known in England as the crimson speckled flunkie, may be separated from U. ornatrix by the wing maculation of the adult moths. The dorsal surface of the hindwing of U. pulchella (Fig. 1) is white with a black marginal band. In some forms of U. ornatrix, including the North American subspecies, U. ornatrix bella (Linnaeus), bella moth, the ground color of the hindwing is pink. In the forms of U. ornatrix with white hindwings a subapical pink spot is present in the black marginal band at the costal margin of the wing. This spot is absent in U. pulchella. The ventral surface of the forewing of U. pulchella (Fig. 2) is white in the basal and medial area and a large black postmedial spot is present. All forms of U. ornatrix have the ventral surface of the forewing almost uniformly pink. The larval stages also provide characters for the separation of the two species. Larvae of U. ornatrix normally have a conspicuous, irregular, transverse, black bar on each segment, whereas larvae of U. pulchella are typically mottled and have a pale yellow, longitudinal, dorsal band or series of spots.

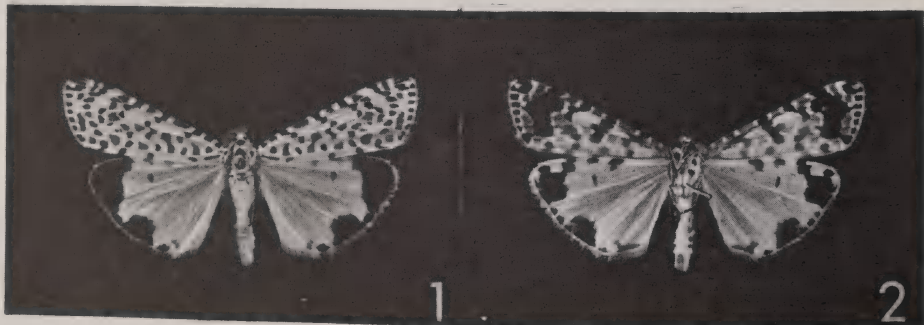


Fig. 1-2. Adult ♂ U. pulchella (L.), Reduit Beach, St. Lucia. 1, dorsal view; 2, ventral view.

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bci26
A New Species of Leafmining Fly on Mealycup Sage ^{bci276}
(Diptera: Agromyzidae) ^{c372}

George C. Steyskal 1/

ABSTRACT. A new species of Phytomyza is described from Salvia farinacea cultivated in Brazil. The plant is native to Texas, New Mexico, and Oklahoma.

Mealycup sage, Salvia farinacea Benth (Labiatae), is native to Texas, New Mexico, and Oklahoma, but is cultivated as an ornamental in many other places. No leafminer on any species of Salvia has been noted from North America, but John A. Winder of the (Australian) Commonwealth Scientific and Industrial Research Organization (CSIRO) submitted the species here described, which he reared from Salvia farinacea in Curitiba, Paraná, Brazil. I am glad to name the species for him.

Phytomyza winderi, new species
Fig. 1-5

Differences between the present species and Phytomyza platensis by Brèthes are difficult to cite because of the meager description of the latter, the type of which, according to Spencer (1963), is not known. The creamy yellowish anterior part of the front and the location of the crossvein of the wing close to the base of the longitudinal veins in P. winderi disagree with Brèthes' statements: "le front jaune avec la partie à l'entour des antennes... noir" and "la veine transverse est droite et se trouve en face des 3/4 ou 4/5 de la veine longitudinale," although the species runs to P. platensis in the key by Spencer (1963).

MALE. Head as in Fig. 2; front 1.6 times width of eye, slightly elevated above eye in profile; 2 upper orbital bristles, anterior about 0.8 length of posterior; 2 or 3 lower orbital bristles, orbital setulae sparse; cheek 0.25 height of eye; 3rd antennal segment short-elliptic, pubescence black, dense, and short; arista short-pubescent, almost 3 times as long as greatest dimension of 3rd antennal segment.

Mesoscutum with 5 dorsocentral bristles, 3rd (from rear) large and at suture, 4th and 5th (antesutural) about half as long as 3rd; acrostichal bristles in 4 rows back to level of 2nd dorsocentrals, pair of median acrostichals slightly farther posterad. Wing in holotype (Fig. 1) 1.88 mm, in paratypes 1.55-1.61 mm long; 2nd costal section (R₁ to R₃) slightly more than 2 times length of 4th section.

Color generally black; legs dark piceous, knees not distinctly paler; postabdomen and base of scutellum dark brown; face and upper parafacials to 2nd lower orbital bristle piceous; front creamy yellowish, but ocellar triangle and area about base of vertical bristles black; cheek and part of lower occiput (Fig. 2)

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creamy yellowish; palpus and narrow clypeus brown; following areas whitish: broad lateral mesoscutal stripe (except anterior face of humerus, small longitudinal bar anterior to anterior notopleural bristle, and supra-alar declivity), wedge on upper margin of mesopleuron extended ventrally to large mesopleural bristle and tapered forward, and lateral ends of each abdominal tergum for distance somewhat greater than lengths of terga; medioposterior margin of last preabdominal tergum not paler than middle; intersegmental membrane hyaline; sterna black; wing hyaline, veins yellowish or pale brown; squamae hyaline, margin and fringe yellowish; halter whitish. Tomentum moderately dense, gray on mesoscutum, brownish on scutellum. Postabdomen as in Fig. 4.

FEMALE. Similar to male; wing length 1.80 mm; ovipositor sheath (Fig. 5) shining black or piceous, 0.2 mm long; seminal receptacle as in Fig. 3.

HOLOTYPE, allotype, and 2 male and 6 female paratypes, Curitiba, Paraná, Brazil, October 1974, reared from mines in leaves of mealycup sage, Salvia farinacea Benthham, by John A. Winder; holotype (including wing on microslide) and allotype in Museu de Zoologia, Universidade de São Paulo, Brazil; paratypes in U.S. National Museum of Natural History.

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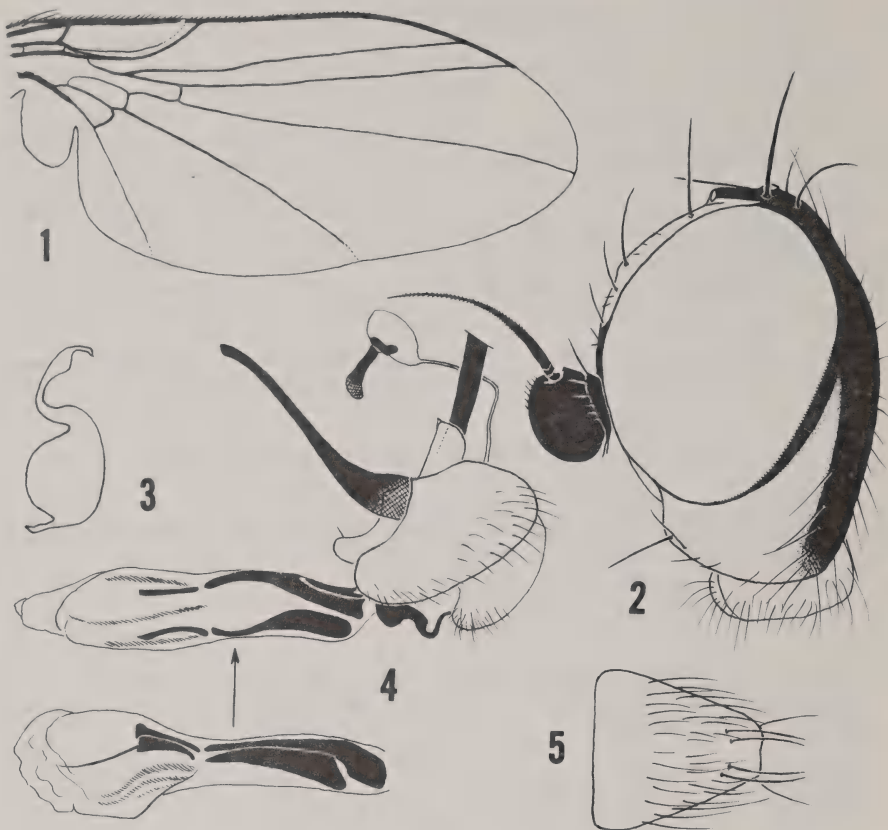


Fig. 1-5. *Phytomyza winderi*, n. sp. 1, wing (holotype); 2, profile of head; 3, seminal receptacle; 4, profile of male postabdomen with ventral view of aedeagus; 5, ovipositor sheath, dorsal view.

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Notes on Several Cockroaches of Southeastern United States
and on the name "Palmettobug" 278

Ashley B. Gurney 1/ and Thomas J. Walker 2/

We and other entomologists have wondered which insect is called the "palmettobug," or whether that common name is applied to more than one species. The "Common Names of Insects" issued by the Entomological Society of America (Anderson, 1975) does not include palmettobug. But Sutherland et al. (1974) includes Blaberus craniifer Burmeister as "palmettobug/giant death's-head roach" in the insect common names list compiled by the Environmental Protection Agency (EPA). The latter list was not designed to replace the "official" ESA list, but to conveniently identify common names used on pesticide labels and in other ways. The EPA list includes names from the ESA list and includes many additional names.

We have queried State entomologists in Gainesville, Florida, who have wide public contacts throughout most of Florida and much extension experience. We are indebted for information to J.E. Brogdon, Archie Carr, L.A. Hetrick, F.A. Johnson, and W.E. Woodruff.

We have learned from the above sources that "palmettobug" is used chiefly in Florida for any large cockroach that lives outdoors or in buildings. "Palmettobug" serves as a euphemism for "roach" or "cockroach" and connotes that these insects have come from the palms or scrubland outside. In addition to Blaberus, the cockroaches called "palmettobugs" include Eurycotis floridana (Walker), Periplaneta fuliginosa (Serville), P. australasiae (Fabricius), P. americana (Linnaeus), and P. brunnea Burmeister. Because Eurycotis floridana probably is less well known than the species of Periplaneta, we have provided basic information on it.

Two of our Floridian informants thought that E. floridana is especially likely to be called "palmettobug;" another thought that P. fuliginosa typifies a "palmettobug." All agreed that large roaches are indiscriminately called "palmettobugs" by many Florida residents. A few insects besides cockroaches sometimes are given common names similar to "palmettobug," such as "palmetto billbug," Rhynchophorus cruentatus (Fabricius). Except for cockroaches, we know of no other vernacular use of "palmettobug."

The "palmetto" in "palmettobug" is also used ambiguously by Florida residents. It is commonly used for the cabbage palm (Sabal palmetto (Walter) J.A. & J.H. Shultes) and for sawpalmetto

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(Serenoa repens (Bartram) Small). The latter is called "scrub palmetto" because its trunk is recumbent and it never forms a tree. The former is also known as "palmetto tree" (after its upright growth habit) and "cabbage tree" (after its edible terminal bud). This tree palmetto harbors the most "palmetto bugs" and is more often planted in Florida dooryards, and its trunk is frequently sheathed in old leaf bases which provide dark, moist retreats for cockroaches.

In the northern States, Periplaneta species occur only as indoor pests, but in the deep Southeast they commonly occur and breed outdoors. Furthermore, they often fly as well as run. Until recently, P. fuliginosa was sometimes thought to be native to the United States (Blatchley, 1920) or possibly so (Rehn, 1945). But as the fauna of eastern Asia and Japan has become better known, with several names based on specimens from that area falling in the synonymy, P. fuliginosa is regarded as native there and adventive in the Americas (Asahina, 1961 and Princis, 1966). The other 3 species of Periplaneta inhabiting the United States are well known as established adventives, probably from Africa (Rehn 1945).

Blaberus craniifer, shown in the EPA list (Sutherland et al., 1974:I, p. 91; II, p. 17) as sometimes called "palmetto bug," is an apparently native cockroach inhabiting the Florida Keys. It is larger than the Periplaneta spp. and can be expected to arouse repugnance when seen by most people. The related Blaberus discoidalis Serville, perhaps from the West Indies or the mainland of South or Central America, has been found in the Florida Keys during recent years (Roth, 1969) and would probably be regarded similarly to B. craniifer.

In conclusion, any large cockroach that lives outdoors and is encountered in or near buildings is sometimes called a "palmetto bug" in the Southeast. The name is applied to Eurycotis floridana most frequently, but often also to Periplaneta spp., which exist wild in Florida and in the warmer parts of the Southeast.

Comments on Eurycotis floridana

This native U.S. cockroach is 28-40 mm long when mature and is dark, often chestnut brown, sometimes with traces of paler areas. It has short, nonfunctional, transverse tegmina (front wings) incapable of flight. Roth and Willis (1960:pl. 11) illustrated both sexes. Nymphs often have the lateral margins of the thoracic segments yellowish or orange, but the color is not consistent in the various instars. E. floridana inhabits southern Georgia and Florida and extends westward along the gulf coast. The most western distribution is recorded from Alabama by Dakin and Hayes (1970).

This cockroach is not unusual in houses and other buildings located near suitable outdoor breeding areas and, unless brought in with firewood or similar material, specimens clearly enter by walking. Roth and Willis (1960), see their index, indicated a wide variety of field habitats, most of which were also given for an area of northern Florida by Friauf (1953). Its habitats range from ground concealment, stumps, tree holes, under loose bark, Spanish moss, and flower heads at night, to the tops of palmettos.

McKittrick et al. (1961) have described in detail the fascinating egg-laying habits of Eurycotis floridana in its native habitat. Often, the oothecae are buried in sand, and at other times, secreted and covered within decaying logs. Oviposition behavior was later summarized by McKittrick (1964). Lawson (1956) described the ovipositor in detail. Willis et al. (1958) supplied data on the life history.

Numerous writers have emphasized the repugnant smell emitted by E. floridana: Blatchley (1920)--"When disturbed the adults emit a greasy liquid which saturates the atmosphere for a rod or two in every direction with its repellent odor," Borror and DeLong (1971)--"emits a very smelly liquid and is sometimes called the stinking cockroach," and Helfer (1963)--"These are the champion 'stinkers' among our U.S. insects."

The odoriferous secretion, produced by adults but not by nymphs, has been studied in depth by Roth et al. (1956). This secretion, produced by glandular cells and stored as a yellow liquid in a large bilobed sac, is ejected through a pore located medially in the intersegmental membrane between the sixth and seventh abdominal sterna. A fine spray or droplets often are ejected several centimeters. According to Eisner et al. (1959), who contributed a very informative general account, the spray of Eurycotis floridana sometimes extends for about a meter. The secretion may irritate man in sensitive areas, especially the eyes. The cockroaches themselves suffer a toxic reaction if they are confined without adequate ventilation and then caused to emit the secretion. Roth et al. (1956) found the secretion trans-2-hexenal, an aldehyde present elsewhere in nature in whale oil and java citronella. They speculated that this aldehyde may serve as a repellent or deterrent to a predator. Some repellent effects were observed by Eisner et al. (1959).

No uniformly accepted common name has been applied to Eurycotis floridana; besides "palmettobug," it has been called "large Florida roach" and "a woods cockroach." A common name we prefer is "Florida stinkroach" because it is short, succinct, identifies the insect group involved, the geographic area where this cockroach is best known, and emphasizes the objectionable odor.

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Spider Mites (Tetranychidae: Acarina) from Michigan 174

Donald M. Tuttle¹/ and Edward W. Baker²/

Abstract

Twenty-one species of economic plant feeding spider mites are listed from Michigan. Three species found were originally described from that State: Tetranychopsis potentilla Baker and Tuttle, Eurytetranychus buxi (Garman), and Tetranychus mcdanieli (McGregor).

The following list of spider mites is the first for Michigan, representing collections from plants by D.M. Tuttle during the summers of 1961, 1962, 1964, and 1965, particularly at Bay City, Detroit, and Estey. This list includes many new records and hosts. Although McGregor (1950) and Pritchard and Baker (1955) treated species from the United States in general, only four States have been adequately surveyed to date. These States are New York (Reeves, 1963), South Dakota (White, 1966), Arizona (Tuttle and Baker, 1968), and Missouri (Thewke and Enns, 1970). An introduction to the northern fauna of the Midwest is presented in this paper.

Tuttle found 21 species of spider mites, including three described from Michigan: Tetranychopsis potentilla Baker and Tuttle, Eurytetranychus buxi (Garman), and Tetranychus mcdanieli McGregor. Ten genera are represented.

Specimens were obtained by beating or rapping plant material on a No. 20 mesh screen sieve fitted over a plastic funnel. A 4-dram "Tite-seal" vial was held on the end of the funnel. A preservative solution of AGA (alcohol, glycerin, and acetic acid) was added to the vial after the mites were collected.

References are given for detailed study of the taxonomic treatment and host information of the species listed.

Bryobia Koch

Bryobia praetiosa Koch, clover mite

Aegopodium podagraria L. (bishops goatweed) Bay City, VIII-5-61.

Prunus triloba Lindl. (flowering almond) Bay City, VII-26-62.

Solanum dulcamara L. (bitter nightshade) Detroit, VII-10-62.

Bryobia rubrioculus (Scheuten), brown mite

Lonicera canadensis Marsh (American fly honeysuckle) Bay City, VII-13-62.

Malus sylvestris Mill. (apple) Bay City, VII-31-61 and VII-21-62; Detroit, VII-10-62.

Prunus avium L. (sweet cherry) Detroit, VII-11-62.

Pyrus communis L. (pear) Bay City, VI-19-65.

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Tetranychopsis Canestrini

Tetranychopsis potentilla Baker and Tuttle

Potentilla argentea L. (silvery cinquefoil) Estey, VII-13-62.

This mite species was described from the above collection and types were deposited in the U.S. National Museum.

Petrobia Murray

Petrobia (Petrobia) latens (Müller), brown wheat mite

Aesculus hippocastanum L. (horsechestnut) Bay City, VII-21-62.

Potentilla argentea L. (silvery cinquefoil) Estey, VII-13-62.

Tetranychina Banks

Tetranychina harti (Ewing)

Oxalis corniculata L. (creeping woodsorrel) Bay City,

VIII-5-61.

Eurytetranychus Oudemans

Eurytetranychus buxi (Garman)

Buxus sempervirens L. (boxwood) Detroit, VIII-6-65.

This mite species was described in 1935 from males and females on boxwood in Michigan.

Panonychus Yokoyama

Panonychus ulmi (Koch), European red mite

Malus sylvestris Mill. (apple) Detroit, VII-10-62.

Prunus avium L. (sweet cherry) Detroit, VII-11-62.

Rosa multiflora Thunb. (rambler rose) Detroit, VIII-3-61.

Ulmus americana L. (American elm) Bay City, VIII-3-61.

Eotetranychus Oudemans

Eotetranychus populi (Koch)

Betula papyrifera Marsh (paper birch) Bay City, VII-17-62.

Hamamelis virginiana L. (witchhazel) Estey, VII-13-62.

Populus deltoides Bartr. (eastern cottonwood) Estey, VII-13-62.

Platytetranychus Oudemans

Platytetranychus thujae (McGregor)

Juniperus virginiana L. (eastern redcedar) Bay City, VII-13-62.

Schizotetranychus Trägårdh

Schizotetranychus sp.

Salix nigra Marsh (black willow) Estey, VII-30-61.

Oligonychus Berlese

Oligonychus (Metatetranychoides) aceris (Shimer)

Acer rubrum L. (red maple) Estey, VII-13-62.

Oligonychus (Oligonychus) bicolor (Banks)

Quercus alba L. (white oak) Bay City, VII-16-62; Coloma, VII-15-64; Pinconning, VIII-4-65.

Quercus rubra L. (northern red oak) Bay City, VII-13-62;

Estey, VII-16-62.

Oligonychus (Wainsteiniella) milleri (McGregor)
Pinus sylvestris L. (Scotch pine) Estey, VII-13-62.

Oligonychus (Reckiella) pratensis (Banks), Banks grass mite
Zea mays var. saccharata Sturtev. (sweet corn) Bay City,
VIII-2-65.

Oligonychus (Oligonychus) ununguis (Jacobi), spruce spider mite
Juniperus virginiana L. (eastern redcedar) Bay City, VII-8-62.
Picea abies Karst. (Norway spruce) Bay City, VII-28-62.
Picea glauca (Moench) Voss (white spruce) Bay City, VII-16-62.

Tetranychus Dufour

Tetranychus (Polynychus) canadensis (McGregor), fourspotted
spider mite

Hamamelis virginiana L. (witchhazel) Estey VII-14-62.
Polygonatum biflorum (Walt.) Ell. (small solomonseal)
Manistique, VII-28-62.

Rhus typhina L. (staghorn sumac) Estey, VII-15-62.

Ribes hirtellum Michx. (hairystem gooseberry) Estey VII-10-62.
Rosa multiflora Thunb. (rambler rose) Detroit, VII-8-62.

Tetranychus (Polynychus) schoenei McGregor, Schoene spider mite
Rubus allegheniensis Porter (Alleghany blackberry) Bay City,
VI-28-64.

Rubus idaeus L. strigosus (Michx.) Maxim. (American red
raspberry) Bay City, VIII-5-61.

Rubus occidentalis L. (blackcap raspberry) Estey, VII-11-62.

Tetranychus (Armenychus) mcdanieli McGregor, McDaniel spider mite
Fragaria virginiana Duchesne (Virginia strawberry) Estey,
VII-14-62.

Malus sylvestris Mill. (apple) Bay City, VII-12-62.

This mite species was described from material collected on
raspberry at Bridgeman, Michigan, and named in honor of Miss
E.I. McDaniel, a professor of entomology at Michigan State
College (now Michigan State University).

Tetranychus (Tetranychus) hydrangeae Pritchard and Baker
Aralia nudicaulis L. (wild sarsaparilla) Estey, VII-15-62.

Tetranychus (Tetranychus) turkestani Ugarov and Nikolski,
strawberry spider mite

Rubus idaeus L. strigosus (Michx.) Maxim. (American red
raspberry) Bay City, VII-31-61.

Tetranychus (Tetranychus) urticae Koch, twospotted spider mite
Aegopodium podagraria L. (bishops goatweed) Bay City, VII-26-62.

Althaea rosea (L.) Cav. (hollyhock) Bay City, VII-4-64.

Nepeta cataria L. (catnip) Bay City, VII-26-62.

Phlox carolina L. (thick-leaf phlox) Bay City, VII-21-62.

Potentilla fruticosa L. (bush cinquefoil) Manistique,
VII-28-62.

Trifolium hybridum L. (alsike clover) New Hudson, VII-10-62.

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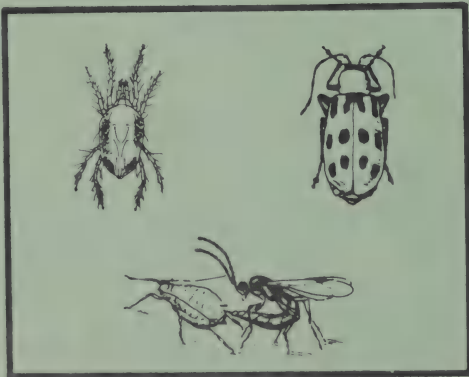
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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
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COOPERATIVE PLANT PEST REPORT**HIGHLIGHTS**Current Conditions

CORN EARWORM, BEET ARMYWORM, and FALL ARMYWORM severe in corn in Everglades area of Florida. (p. 833).

Controls needed for GREENBUG in Washington. (p. 833).

ASPARAGUS RUST severe in Imperial County, California. (p. 838).

Detection

● LITTLE CHERRY VIRUS find in northern Washington is a new United States record. (p. 838).

● Another disease new to this country, CRYPTOMERIA NEEDLE BLIGHT was found in Washington, DC. (p. 839).

● A PYGMEPHOID MITE in Texas is also new for the United States. (p. 840).

● A new continental United States record is reported for a PHYTOSEIID MITE in Florida. (p. 841).

New State records include an ERIOCOCCID SCALE in Minnesota (p. 835), a COREID BUG in Oklahoma (p. 840), and BROWN GARDEN SNAIL in Hawaii (p. 844).

For new county and island records, see pages 846-847.

Special Reports

Distribution of Cereal Leaf Beetle (map). (p. 848).

New Geographical and Seasonal Distribution Records for Fifty-three Species of Virginia Tabanids (Diptera: Tabanidae) (pp. 853-858).

BELTSVILLE AGRICULTURAL RESEARCH CENTER SYMPOSIUM II:
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The theme of the Beltsville Symposium II will deal with current theories of biosystematics in several disciplines, and stress how specific applications in agriculture may be derived from the generalities, based upon biosystematic classification. It will not include specific taxonomic or systematic monographs of economically important organisms. For further information please contact:

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Plant Taxonomy Laboratory
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Reports in this issue are for the weeks ending October 29 through November 12 unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

ASTER LEAFHOPPER (Macrostoteles fascifrons) - OKLAHOMA - Light to moderate in one volunteer field and several early planted wheat fields in Kay County week ending November 5. Common in ryegrass and red clover pasture in Seminole County week of November 12. Light in most wheat fields in Kingfisher, Grady, Canadian, and Caddo Counties. (OK Coop. Surv.).

CORN EARWORM (Heliothis zea) - FLORIDA - This species along with BEET ARMYWORM (Spodoptera exigua) and FALL ARMYWORM (S. frugiperda) heavy and destructive on sweet corn in Everglades area this fall. Controls necessary on commercial plantings. Beet armyworm and fall armyworm 14 and 86 percent, respectively, in whorls October 29 in untreated check plots at Belle Glade, Palm Beach County. All plants infested; loss almost total. (FL Coop. Surv.).

GREENBUG (Schizaphis graminum) - OREGON - Nymphs and adults of this species and an APHID (Rhopalosiphum padi) in 80-acre wheat planting southwest of Hermiston, Umatilla County, October 25. Greenbugs averaged 10.4 per row foot mainly on upper part of leaves. Averaged 7.3 per row foot primarily in plant whorls. Plants in 4-leaf to 2-tiller stage. ENGLISH GRAIN APHID (Macrosiphum avenae) occasionally present. (Collins, Nicholes).

WASHINGTON - Greenbug ranged 30-500 per foot of row on 8-inch wheat October 29 near Wilbur, Lincoln County. Aphids in crowns, about 10,000 acres treated, controls poor. (Pike). Widespread on winter wheat on upper bench land of Asotin County above Clarkston, Asotin, and Anatone November 11. About one-third of field with noticeable infestation, up to 20-30 aphids per 4-inch plant. Control necessary at higher rates of infestation. (Warnock, Retan). TEXAS - Ranged 1-5 per row foot of wheat in Deaf Smith, Castro, Potter, Swisher, and Hall Counties October 21 to November 3. (Daniel).

OKLAHOMA - Greenbugs per row foot of wheat by county week of November 12: Kingfisher 0-5 (5 fields), averaged 27 (one field); Canadian 0-8 (8 fields), Grady 0-5 (6 fields), Caddo 0-3 (4 fields), Payne averaged 21 (one field), Garvin 8 (one field). (OK Coop. Surv.). KANSAS - Averaged one per row foot in one of 2 wheat fields (3-5 inches tall) in Doniphan County and in 2 of 3 fields (3-4 inches) in Atchison County week ending October 29. Fall surveys usually negative or trace. Heaviest, week ending November 5, averaged 6 per row foot in 6-inch (5-tiller stage) wheat in McPherson County near Roxbury and one per row foot in 5-inch (5 tiller) wheat in Harper County. (Bell). MISSISSIPPI - This species and ENGLISH GRAIN APHID (Macrosiphum avenae) light and spotty on winter wheat in Monroe, Oktibbeha, and Clay Counties week ending October 29. (Anderson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OREGON - Adults and nymphs 0-4 (averaged 0.25-0.50) per plant in 40-acre alfalfa planting southeast of Hermiston, Umatilla County, October 26. Plants in two cotyledon leaf to two true leaf stage. PEA APHID (Acyrtosiphon pisum) also present. (Collins, Nicholes). KANSAS - Average per sweep of alfalfa by county (one field) week ending November 5: Wabaunsee 10, Chase 200, Marion 160, Rice 10, and McPherson 230. (Bell).

CORN, SORGHUM, SUGARCANE

INSECTS

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - NEW MEXICO - Surveys in Union County showed 9 in 10 cornstalks infested week ending November 12. (NM Coop. Rep.). MISSOURI - Percent corn infested (and percent plants girdled) per 50 plants checked in 5 fields by county: Cape Girardeau 33.3 (6.8), Mississippi 24.4 (5.6), New Madrid 36.4 (7.2), Scott 42.0 (8.8), Stoddard 26.4 (8.4). (Munson). ALABAMA - Larvae taken on corn at Wedowee, Randolph County, September 15, 1976. Collected by L.D. Barker. Determined by H.F. McQueen. This is a new county record. Specimens also taken September 22 at same location. (McQueen).

CORN ROOTWORMS (*Diabrotica* spp.) - NEBRASKA - Fields with lodged corn (and percent lodging) by district during fall survey (25 fields per district): Northeast 5 (0-32), east one (0-5), central one (0-100), southeast 4 (0-10), south 3 (0-16). (Campbell et al.). WISCONSIN - Corn lodging averaged 3.4 percent during fall survey statewide. Adults and larvae very heavy, but very few rain and windstorms occurred to cause lodging. (WI Pest Surv.).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - NORTH DAKOTA - Adults per 100 corn plants by county: Grand Forks one, August 31, 1976; Griggs one and Nelson 3, August 30; Walsh one, August 31. Collected and determined by C.G. Scholl. Adults one per 100 corn plants in Golden Valley County September 1, 1976. Collected and determined by W.J. Brandvik. Specimens one per 100 corn plants in Pembina County, September 9, 1976 and one per 200 plants in Cavalier County, September 9. Collected and determined by C.G. Scholl. Adults one per 100 plants by county: Mercer one, August 23, 1976; Oliver one, August 23; Morton one, August 24; Burleigh 10, August 24. Collected and determined by W.J. Brandvik. These are new county records, cities unknown. (Brandvik, Scholl). MARYLAND - Collected on corn near Eden, Somerset County, by B. Davis August 25, 1976. Determined by E.J. Ford. This is a new county record. (PPQ).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - NORTH DAKOTA - Adults one per 25 corn plants in Ransom County (city unknown) September 2, 1976. Collected by C.G. Scholl. Determined by E. Balsbaugh. This is a new county record. (Scholl).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - NORTH DAKOTA - Adults on corn by county: Kidder, one per 50 plants, September 7, 1976; McLean and Williams, one per 200 plants, August 31. Collected and determined by W.J. Brandvik. Pembina, one per 25 plants, September 8; Pierce, one per 200 plants, September 9. Adults one per 100 corn plants in Grand Forks and Walsh Counties August 31, 1976. Collected and determined by C.G. Scholl. These are new county records, cities unknown. (Scholl).

SMALL GRAINS

INSECTS

FALL ARMYWORM (*Spodoptera frugiperda*) - OKLAHOMA - Still light to moderate on wheat in Major County week ending October 29. (OK Coop. Surv.).

HESSIAN FLY (Mayetiola destructor) - OKLAHOMA - Puparia averaged 11 per 100 plants in wheat field in Agra area, Lincoln County, week of November 12. (OK Coop. Surv.). KANSAS - Infested 12 percent of 5-inch planted wheat in Wabaunsee County, infestation mainly full-grown larvae or puparia not tanned. Trace infestations in early wheat in McPherson and Harper Counties. (Bell).

AN APHID (Rhopalosiphum padi) - OKLAHOMA - First of season week ending October 29. Very light and scattered on wheat in Washita, Caddo, and Beckham Counties. Light, 0-5 per row foot, in 12 of 24 wheat fields in Kingfisher, Canadian, Grady, Caddo, and Garvin Counties week of November 12. (OK Coop. Surv.). KANSAS - Averages per row foot of wheat by county: Doniphan 26 on 5-inch plants and Atchison 10 on 4-inch plants week ending October 29; most on lower stems, often below soil level. Usually negative in wheat in east-central, central, and south-central districts. Up to 25 per row foot in early wheat (6-inch 5 tiller) in McPherson County (south-central district) week ending November 5; averaged 2 per row foot in early wheat (5-inch) in Harper County. (Bell).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Averaged 3 per row foot in one Canadian County wheat field and one per row foot in one Grady County field week of November 12. First report of season. (OK Coop. Surv.).

TURF, PASTURES, RANGELAND

INSECTS

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - CALIFORNIA Larvae very heavy in rangeland of southeastern and southern Kern County. Abnormal rains resulted in profusion of filaree (Erodium spp.) and other broadleaf plant hosts. Cattlemen concerned forage will decrease. (CA Pest Rep.).

BLUEGRASS BILLBUG (Sphenophorus parvulus) - MARYLAND - Larvae actively feeding week ending October 29 in 30 acres commercial bluegrass sod in Howard County, possibility of larvae and not adults overwintering. Larvae one per square foot in Prince Georges County and 4-6 per square foot in Howard County week ending November 8. Freezing weather expected to cause high mortality. (Univ. Md., Entomol. Dep.).

AN ERIOCOCCID SCALE (Eriococcus insignis) - MINNESOTA - Collected on quackgrass (Agropyron repens) by H. Kulman, October 15, 1975. at St. Paul, Ramsey County. Determined by D.R. Miller. This is a new State record. Subsequent collection by E. Cook, August 12, 1976. (MN Pest Rep.).

CHINCH BUG (Blissus leucopterus leucopterus) - MARYLAND - Overwintering specimens ranged 5-30 per square foot in 60 acres commercial bluegrass sod at Glen Dale, Prince Georges County, week ending November 8; late season damage heavy. (Univ. Md., Entomol. Dep.).

WEEDS

PURPLE STARWART (Centaurea calcitrapa) - CALIFORNIA - Taken at Mad River, near Ruth Lake Dam, Trinity County, during entryway and rangeland survey August 18, 1976. Collected by R. Keck and M. Keffer. Determined by D. Barbe. This is a new county record. (CA Pest Rep.).

FORAGE LEGUMES

INSECTS

ALFALFA WEEVIL (Hypera postica) - INDIANA - Eggs averaged 4.8 (ranged 0-22) per ten 0.25-square foot samples of alfalfa 18 inches tall collected October 24 in Daviess County. Sampling indicates oviposition underway, beginning 1977 alfalfa weevil season. Most eggs brown, eyespots visible on about 50 percent of brown eggs at room temperature after 2 days. (Meyer).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - NORTH DAKOTA - Adults one per 100 sweeps of alfalfa in Steele County August 30, 1976, and Cavalier County September 9, 1976. Collected and determined by C.G. Scholl. These are new county records, cities unknown. (Scholl).

TARNISHED PLANT BUG (Lygus lineolaris) - OKLAHOMA - Ranged 10-20 per 10 sweeps in Muskogee County alfalfa week of November 12. (OK Coop. Surv.).

PEA APHID (Acyrtosiphon pisum) - KANSAS - Very light on 12-inch alfalfa in Atchison County week ending October 29. (Bell).

SOYBEANS

INSECTS

SOUTHERN GREEN STINK BUG (Nezara viridula) - ALABAMA - Adults and nymphs 2-10 per 10 foot of row on soybeans in Lee County. (McQueen).

PEANUTS

DISEASES

POD AND PEG ROTS - OKLAHOMA - Pellicularia filamentosa and Pythium spp. continued extensive damage to peanuts. Heavy loss in Carter, Love, Marshall, Bryan, and Atoka Counties. (OK Coop. Surv.).

NORTHERN ROOT-KNOT NEMATODE (Meloidogyne hapla) - OKLAHOMA - Populations 40 percent heavy and 40 percent light in peanut soil and plant samples from Caddo and Hughes Counties week of November 12. (OK Coop. Surv.).

COTTON

INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Active in San Angelo area, damaged young cotton squares and bolls. Most of cotton killed by frost. (Wilson). ALABAMA - Occasional weevil still feeding in small bolls and squares in Lee County cotton fields. Lowest temperatures to date in area 35 degrees F. (McQueen).

COTTON APHID (Aphis gossypii) - ALABAMA - Heavy populations developed mostly inside brackets of squares and small bolls on mostly all cotton plants throughout 5 fields in Lee County. Sooty mold growing on honeydew residue on leaves and to a lesser extent on lint in unharvested bolls in these fields. (McQueen).

SUGAR BEETS

INSECTS

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Adults heavy in blacklight traps week ending November 5 at Bellota, San Joaquin County. Damage to sugar beets heavy on 5-10 percent of old leaf surface. Adults heavy along with FALSE CELERY LEAFTIER (Udea profundalis). Damage about 50 percent for both species. Similar situation and loss at Farmington, San Joaquin County, 90 percent damage due to S. exigua. (CA Pest Rep.).

POTATOES, TOMATOES, PEPPERS

INSECTS

POTATO TUBERWORM (Phthorimaea operculella) - VIRGINIA - Larvae infested about 50 percent harvested garden potatoes in Nottoway County. Infestations still widespread. (Allen, Oct. 28).

COLE CROPS

INSECTS

IMPORTED CABBAGEWORM (Pieris rapae) - ALABAMA - Adults active and laying eggs on cabbage, collards, and turnips in 3 home gardens in Lee County. (McQueen).

CABBAGE APHID (Brevicoryne brassicae) - MARYLAND - Ranged 100-300 per plant in small untreated cabbage fields in Dorchester and Wicomico Counties; parasitism heavy. (Univ. Md., Entomol. Dep.).

CUCURBITS

DISEASES

CUBENSIS DOWNY MILDEW (Pseudoperonospora cubensis) - CALIFORNIA - Rare disease of melons and other cucurbits in several melon fields in Imperial Valley, Imperial County, week ending November 12. Protective treatment may be necessary since pathogen is internal. (CA Pest Rep.).

INSECTS

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - NORTH DAKOTA - Adults collected on cucumbers and pumpkins in garden at Upham, McHenry County, August 26, 1976. Collected by H. Nieowehner. Determined by D.K. McBride. This is a new county record. (Scholl).

GENERAL VEGETABLES

DISEASES

ASPARAGUS RUST (Puccinia asparagi) - CALIFORNIA - Reached epiphytotic condition on asparagus for first time in Imperial County week ending November 5. Infection in some fields moderate to severe on all plants; ferns partially defoliated and dead. (CA Pest Rep.).

INSECTS

BET ARMYWORM (Spodoptera exigua) - MISSISSIPPI - Adults still heavy in Washington County light traps week ending November 4. Larvae fed on several types of vegetation. (Anderson).

BET LEAFMINER (Pegomya hyoscyami) - CALIFORNIA - Larvae heavy on Swiss chard at Grass Valley, Nevada County, week ending November 5. (CA Pest Rep.).

DECIDUOUS FRUITS AND NUTS

DISEASES

LITTLE CHERRY VIRUS - WASHINGTON - Survey mapped 850 fruiting cherry trees from northern border of State to Tonasket in Okanogan Valley. Of 68 visually questionable trees, all but 5 eliminated due to other causes. Samples taken from these 5 near Oroville and Ellisford, Okanogan County, by D. Gaspar, B. Bryce, H. O'Reilly, and L. Parish, July 8, 1976. One sample 2 miles north of Ellisford determined positive by acridine orange fluorescent microscopy tests conducted by J.T. Slykhuis in Canada. This is a new United States record. Of the 4 samples tested, one was negative and 3 were suspicious. More tests being conducted on latter 3. (PPQ).

INSECTS

SAN JOSE SCALE (Quadraspidiotus perniciosus) - ALABAMA - Heavily infested 1976 growth of all twigs and limbs on 8 peach trees at residence at Auburn, Lee County, week ending November 12. (McQueen).

PECAN WEEVIL (Curculio caryae) - OKLAHOMA - Larvae very heavy in Comanche County pecans week of November 12. (OK Coop. Surv.). ALABAMA - Damage general and destructive to very light pecan crop in Covington County week ending November 5. (McQueen).

BLACK PECAN APHID (Tinocallis caryaefoliae) - ALABAMA - Late season buildup of this species and YELLOW PECAN APHID (Monellia spp.) general and destructive to very light pecan crop throughout Covington County. (Linder).

CITRUS

INSECTS

CALIFORNIA RED SCALE (*Aonidiella aurantii*) - CALIFORNIA - Adults and nymphs 100 per leaf of citrus at Lockeford, San Joaquin County, week ending October 29. (CA Pest Rep.).

WOOLLY WHITEFLY (*Aleurothrixus floccosus*) - CALIFORNIA - All stages widely occur on citrus in Orange County week ending November 12. Has been spreading in Orange County and into Los Angeles County. (CA Pest Rep.).

SMALL FRUITS

INSECTS

GRAPE ROOT BORER (*Vitacea polistiformis*) - MARYLAND - Larvae heavy in roots of large grape planting week ending October 29 in Prince Georges County; plants stunted this summer. (Univ. Md., Entomol. Dep.).

TWOSPOTTED SPIDER MITE (*Tetranychus urticae*) - WASHINGTON - First find on wine grapes in State October 25 at Prosser, Benton County, in greenhouse. (Stark, Cone).

ORNAMENTALS

INSECTS

FLORIDA FERN CATERPILLAR (*Callopistria floridensis*) - ALABAMA - Larva taken from fern at residence at Hartselle, Morgan County, August 16, 1976. Collected by G.C. Cain. Determined by D.M. Weisman. This is a new county record. (Cain).

WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) - ALABAMA - Taken on *Syringa* sp. (lilac) at Lapine, Crenshaw County, October 1, 1976. Collected by W.T. Seibels. Determined by M.L. Williams. This is a new county record. (McQueen).

BANDED GREENHOUSE THRIPS (*Hercinothrips femoralis*) - FLORIDA - Severe on about 95 percent of 19,240 *Chamaedorea elegans* (neanthe bella palm) at nursery in Plymouth, Orange County, October 25. (FL Coop. Surv.).

FOREST AND SHADE TREES

DISEASES

CRYPTOMERIA NEEDLE BLIGHT (*Phoma cryptomeriae* Kawamura) - WASHINGTON, DC - Collected from established *Cryptomeria* spp. trees at the National Arboretum and at surrounding residences. First find by R.L. Brittingham, October 19, 1976. Determined by F.A. Uecker. This is a new United States record. Due to taxonomic problems, this species may be similar to other *Phoma* species on other hosts. Culture tests being conducted to determine virulence on cryptomeria. (PPQ).

INSECTS

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Trapped in these counties for new records (with dates of trap operation): Columbia at Scappoose (June 3 to August 18), Washington at Tigard (June 2 to July 28), Clackamas at Lake Grove (June 1 to July 28), Yamhill at Newberg (June 8 to July 28), Marion at Salem (May 24-28), Polk at West Salem (June 23 to August 4), Benton at Corvallis (May 13-20), Linn at Halsey (June 29 to August 12), Lane at Veneta (June 15 to August 5), and Douglas at Oakland (July 20 to September 8). Collection and determination at Corvallis by J. Capizzi. All other collections and determinations by R.L. Penrose. (Penrose).

MIMOSA WEBWORM (Homadaula anisocentra) - ALABAMA - Infested mimosa tree at Linden, Marengo County. Collected by R. Yates, September 2, 1976. Determined by H.F. McQueen. This is a new county record. (Yates).

A COREID BUG (Leptoglossus corculus) - OKLAHOMA - Adult female collected from Scotch pine cone at Stillwater, Payne County, by G. Lehar, September 11, 1975. This is apparently a new State record. Adult male in pine seed orchard at Idabel, Mc Curtain County, by B. Smith and G. Lehar in September 1975 (day unknown). This is apparently a new county record. Both determined by J.L. Herring. (OK Coop. Surv.).

MAN AND ANIMALS

INSECTS

COMMON CATTLE GRUB (Hypoderma lineatum) - TEXAS - Some adults emerged in Castro County week ending November 12, very early. (Patrick). OKLAHOMA - Ranged 1-6 per head in backs of 26 of 79 dairy heifers in Payne County week of November 12. First report of season. (OK Coop. Surv.).

MISCELLANEOUS WILD PLANTS

INSECTS

A PYGMEPHOID MITE (Pygmephorus primitivus Krczal) - TEXAS - Collected from live oak at Austin, Travis County, by J. Welch, April 12, 1975. Determined by R.L. Smiley. This is a new United States record. Known to feed on fungus in Europe. Not known to be economic. (PPQ).

STORED PRODUCTS

INSECTS

LESSER MEALWORM (Alphitobius diaperinus) - WASHINGTON - Heavy in poultry litter and feed in commercial egg production facility at Castle Rock, Cowlitz County, week ending November 11. Beetle associated with dissemination of acute avian leukosis virus. (Klostermeyer).

CONFUSED FLOUR BEETLE (Tribolium confusum) - MARYLAND - This species and MEDITERRANEAN FLOUR MOTH (Anagasta kuehniella) heavily infesting 5 tons of chicken feed on research farm at Salisbury, Wicomico County, week ending November 12. (Univ. Md., Entomol. Dep.).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

AN APHIDIID WASP (Trioxys complanatus) - OKLAHOMA - Reared from Therioaphis maculata (spotted alfalfa aphid) collected on alfalfa near Union City, Canadian County, March 2, 1976. Collected by D.C. Arnold. Determined by P.M. Marsh. This is a new county record. Previously reared from T. maculata at Sand Springs, Tulsa County, April 3, 1967, and from Driftwood, Alfalfa County, April 11, 1972. (OK Coop. Surv.).

A CHALCID WASP (Brachymeria intermedia) - MARYLAND - Released against Lymantria dispar (gypsy moth) at 3 separate sites in Cecil County by State Department of Agriculture September 25 to October 8. Last 5 colonies released in Cecil County week ending November 8. (Univ. Md., Entomol. Dep.).

A PHYTOSEIID MITE (Phytoseius woodburyi De Leon) - FLORIDA - Adults taken on Quercus virginiana (live oak) in nursery at Miami Lakes, Dade County, August 10, 1976. Collected by M. Corman. Determined by H.A. Denmark. This is a new continental United States record. Specimens associated with unknown eriophyid mite damaging oak trees. (FL Coop. Surv.).

FEDERAL AND STATE PROGRAMS

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - CALIFORNIA - Last known confirmed infected tree in Sonoma County removed week ending October 29. Total of 142 trees removed at Henno Road Site. Sucker treatment to prevent regrowth finished. Tree removal and cleanup in Napa County concluded week ending November 5. Intensive survey work in all counties completed as of week ending November 12. Due to potential hazard, 2 trees infested by Scolytus multistriatus (smaller European elm bark beetle) in Marin County removed. New infection site near Calistoga, Napa County. Symptoms noted by owner about a year ago. Disease has since spread to surrounding trees. Tree appearance and infected sucker growth in area suggests disease is totally systemic and spreading by root graft. Removal of infected and exposed trees in Santa Clara County planned for week ending November 19. Broodwood removal and disposal nearly completed in Sonoma County. (CA Pest Rep.).

INSECTS

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Males averaged 85.23 per trap, almost double this period, indicating fourth generation flight at Porterville, Tulare County, week ending October 29. Modesto, Stanislaus County, only city infested north of Tulare County. (CA Pest Rep.).

RED IMPORTED FIRE ANT (Solenopsis invicta) - TEXAS - Collected at Mt. Pleasant, Titus County, by B.J. Tapscott, August 20, 1976. Determined by R.L. Hodgdon. GEORGIA - Collected on a roadside in Oconee County by G.D. Roper August 20, 1976. City unknown. Determined by E.B. Bauman. SOUTH CAROLINA - Collected at Tega Cay, York County, July 27, 1976, and at Greenwood, Greenwood County, October 14 by J.L. King. Determined by R.F. Bollinger. All above data are for new county records.

All data below are first determinations for the S. invicta name in these counties. Collected in South Carolina at Bowman, Orangeburg County, August 11; at Ehrhardt, Bamberg County, June 1; and at Moncks Corner, Berkeley County, June 7 by P.W. Langford. At Summerton, Clarendon County, by J.T. Squires, September 14. At Cottageville, Colleton County, by G. LaFave, September 13. At Florence, Florence County, by S.L. Thompson, September 3. At Conway, Horry County, by J.L. McKee, September 24. At West Columbia, Lexington County, and Columbia, Richland County, by J.L. King, October 15. NORTH CAROLINA - Collected at Evergreen Columbus County, and at Fairmont, Robeson County, by D.M. McIntyre, August 9, 1976. All determined by R.F. Bollinger. (PPQ).

GYPSY MOTH (Lymantria dispar) - CALIFORNIA - Surveyed about 66 percent of blocks within square mile delimitation zone in San Jose, Santa Clara County, by October 28. Survey crews continued to inspect properties at San Jose on blocks immediately surrounding egg mass finds. To November 12, 6 infested properties on 2 blocks uncovered. About 250 egg masses found. Survey crews canvassed a 2-block radius around infested properties. Within intensive survey core area, 1,209 properties inspected. As of October 15, eighty-four blocks have been inspected on first time basis. (CA Pest Rep.). PENNSYLVANIA - Egg masses per acre taken October 28 near Perry, Cumberland County, border along top of Blue Mountain: 1,240-1,320 west of river, 480-600 five miles west of river, 160-280 seven miles west of river, and 0-80 fifteen miles west of river. (Simons).

JAPANESE BEETLE (Popillia japonica) - MISSISSIPPI - Trapped at Aberdeen, Monroe County, by L. Playton, August 4, 1976. Determined by R.D. Gordon. This is a first State find. (PPQ).

ORIENTAL FRUIT FLY (Dacus dorsalis) - CALIFORNIA - Second treatment to be completed on 4 square miles in Venice, Culver City area, Los Angeles County, and 40 percent completed in San Diego week ending October 29. Total of 38 adult males taken in Steiner traps on 26 properties in Los Angeles County as of November 10; Inglewood is core area. Recent finds in Pico Rivera and La Crescenta, 12 and 20 miles respectively from core area. Finds cover about 85 square miles. Trapping covers 340 square miles with 5 Steiner traps per square mile. (CA Pest Rep.).

SCREWORM (Cochliomyia hominivorax) - Total of 4,205 cases reported from continental U.S. September 26 to October 9 as follows: Oklahoma 20, Texas 4,144, New Mexico 13, Arizona 28. Total of 1,048 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 1,598 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 411,176,600 as follows: Oklahoma 2,997,000; Texas

341,532,800; New Mexico 16,236,000; Arizona 50,410,800. Total of 8,226,000 sterile flies released within Barrier of Mexico. (Vet Serv.).

WEEDS

RUSH SKELETONWEED (Chondrilla juncea) - CALIFORNIA - Puccinia chondrillina (skeletonweed rust) established on this weed at 3 sites in Placer County and one site in El Dorado County week ending November 12; heaviest infections at 2 sites in Placer County. Cystiphora schmidtii (a cecidomyiid midge) buildup very heavy on this weed in both counties. (CA Pest Rep.).

SPOTTED KNAPWEED (Centaurea maculosa) - CALIFORNIA - Observed along State Highway 1 in Mendocino County August 19, 1976. Collected by T. Zuttermeister and T. Schmidt. Determined by D. Barbe. This is a new county record. Single plant discovered during entryway and rangeland detection survey south of Fort Bragg. Plant was in flower. Eradication planned. (CA Pest Rep.).

CORRECTIONS

CPPR 1(26):372 - HAWAII PEST REPORT - "Single specimen of BROWN GARDEN SNAIL (Helix aspersa) ..." delete "This is a new State record." (L. Nakahara). See CPPR 1(44-47):844.

CPPR 1(38):627 - "ORIENTAL FRUIT FLY (Dacus dorsalis) - Collected by P. Mac Bosson ..." should read "Collected by P. Mac Barron ..."

CPPR 1(41):727 - "A WEEVIL (Cylindrocopturus adsperus) ..." should read "A WEEVIL (Cylindrocopturus adspersus) ..."

CPPR 1(41):743 - "GRAPE PHYLLOXERA (Phylloxera vitifoliae) ..." should read "GRAPE PHYLLOXERA (Daktulosphaira vitifoliae)"

CPPR 1(41):750 - "Stiretrus anchorago fimbriatus (Say)." should read "Stiretrus anchorago fimbriatus (Say)."

CPPR 1(41):761 - "WOOLLY ALDER APHID (Prociphilus tessellatus) ..." should read "WOOLLY ALDER APHID (Paraprociphilus tessellatus) ..."

CPPR 1(41):744 - "DOUGLAS-FIR BEETLE (Dendroctonus pseudosugae) ..." should read "DOUGLAS-FIR BEETLE (Dendroctonus pseudotsugae) ..."

CPPR 1(41):784 - Third paragraph - "... Simulium venustum ..." should read "... Simulium venustum ..."

HAWAII PEST REPORT

Detection - Single specimen of BROWN GARDEN SNAIL (Helix aspersa) reported by S. Furutani from Waimea, Hawaii Island, on October 21, 1976. Determined by S. Higa. Infested at least 4 residences in 0.25-square-mile area. Twenty more specimens of all sizes collected during survey. Further delineation surveys and baiting being conducted. Single specimen at Koloa, Kauai, on June 11, 1976, (See CPPR 1(26):372, 1(29):445, 1(38):629), reported as a new State record now believed to represent an interception unrelated to Waimea infestation. Waimea infestation is a New State Record. Evidence indicates another apparently unrelated interception of single specimen at Kalaheo, Kauai, on October 4, 1976; snail probably arrived at residence via cartons of air-freighted cactus plants. (Matayoshi et al.).

General Vegetables - TOMATO PINWORM (Keiferia lycopersicella) infestations and damage heavy (50 percent of leaves with 3-10 larvae per leaf; 50 percent of fruits infested) on one acre of tomatoes at Omaopio, Maui, week ending October 29. Infestations and damage heavy on 6 acres of tomatoes at Pulehu, Maui, and on acre of eggplant (80 percent of leaves; 1-10 larvae per leaf) at Lualualei, Oahu, week ending November 5. Up to 75 percent of fruits damaged in portion of tomato planting abandoned due to poor growth and insect damage. (Miyahira, L. Nakahara). LEAFMINER FLIES (Liriomyza spp.) moderate to heavy (30-60 percent of leaves heavily mined) on 5 acres of watermelons and 2 acres of tomatoes at Omaopio, and on one acre of green onion at Waianae Valley, Oahu, week ending October 29. (Chun, L. Nakahara). Moderate to heavy infestations and damage (25-60 percent of leaves heavily mined) in one acre mustard cabbage, 0.5 acre round onion, 2.5 acres green onions, and 2 acres pole beans at Waianae Valley and Mikilua, Oahu, and on 8 acres tomatoes at Pulehu week ending November 5. (Miyahira, L. Nakahara). DIAMONDBACK MOTH (Plutella xylostella) heavy on 0.25 acre of head cabbage (3-8 larvae per plant) at Pulehu week ending October 29. CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavy on 0.25 acre of tomatoes at Waianae Valley week ending October 29. PEPPER WEEVIL (Anthonomus eugenii) heavy on all bell pepper plants (2-3 adults per plant) in 0.25 acre at Pulehu and BROAD MITE (Polyphagotarsonemus latus) heavy (75 percent of terminals malformed) on same planting week ending October 29. (Chun, L. Nakahara). ONION THRIPS (Thrips tabaci) moderate to heavy on 50 percent of round onion (3-10 per plant) on 3 acres at Omaopio week ending October 29. (L. Nakahara).

Fruits and Nuts - CITRUS BUD MITE (Eriophyes sheldoni) heavy (more than 50 percent of terminals infested) on 1.5 acres of grapefruit at Kihei, Maui, week ending October 29; light (20 percent of terminals malformed). CARMINE SPIDER MITE (Tetranychus cinnabarinus) heavy on 2 acres of non-bearing papaya field at Pulehu week ending October 29. Moderate predation by Stethorus siphonulus (a lady beetle) and Metaseiulus occidentalis (a phytoseiid mite). CHINESE ROSE BEETLE (Adoretus sinicus) defoliated more than 90 percent of border rows on 6 acres of grapes at Ulupalakua, Maui, week ending October 29. A WHITEFLY (Paraleyrodes naranjæ) and CLOUDYWINGED WHITEFLY (Dialeurodes citrifolii) light infestations observed in yard plantings of citrus at Wailuku, Maui, by L. Nakahara and N. Miyahira, October 21, 1976. Determined by S. Higa. Both are new island records. (Miyahira, L. Nakahara).

Ornamentals - First heavy infestation of a GRACILLARIID MOTH (Caloptilia azaleella) (90 percent of leaves; 1-5 mines per leaf) on azalea (15 plants) in State at Liliha, Oahu, week ending November 5. (Teramoto, L. Nakahara).

Beneficial Insects - Adults of a SCIOMYZID FLY (Sepedon sauteri) heavy (7-8 per plant) on acre of taro at Wailua, Maui, week ending November 5. Host populations of Galba viridis (liverfluke snail) light. (Ah Sam, Kahalekai). A GALL FLY (Procecidochares alani) galled about 20 percent of Hamakua pamakani terminals at Wailua, Maui, week ending November 5. Appears firmly established on Maui. (Miyahira).

Miscellaneous - GIANT AFRICAN SNAIL (Achatina fulica) heavy week ending November 5 at Poipu, Kauai, after few days of heavy rains in early October. Baiting increased in untended lots and undeveloped areas with excellent results. Snails also reported from Nawiliwili and Hanapepe, Kauai. (Sugawa).

DETECTION

NEW UNITED STATES RECORDS

DISEASES

CRYPTOMERIA NEEDLE BLIGHT (Phoma cryptomeria Kawamura) - WASHINGTON, DC. (p. 839).

LITTLE CHERRY VIRUS - WASHINGTON - Okanogan County. (p. 838).

INSECTS

A PYGMEPHOID MITE (Pygmephorus primitivus Krczal) - TEXAS - Travis County. (p. 840).

NEW CONTINENTAL UNITED STATES RECORD

INSECTS

A PHYTOSEIID MITE (Phytoseius woodburyi De Leon) - FLORIDA - Dade County. (p. 841).

NEW STATE RECORDS

INSECTS

BROWN GARDEN SNAIL (Helix aspersa) - HAWAII - Hawaii Island. (p. 844)

A COREID BUG (Leptoglossus corculus) - OKLAHOMA - Payne County. (p. 840).

AN ERIOCOCCID SCALE (Eriococcus insignis) - MINNESOTA - Ramsey County. (p. 835).

NEW COUNTY AND ISLAND RECORDS

INSECTS

AN APHIDIID WASP (Trioxys complanatus) - OKLAHOMA - Canadian (p. 841).

CLOUDYWINGED WHITEFLY (Dialeurodes citrifolii) - HAWAII - Maui (p. 844).

A COREID BUG (Leptoglossus corculus) - OKLAHOMA - McCurtain (p. 840).

FLORIDA FERN CATERPILLAR (Callopistria floridensis) - ALABAMA - Morgan (p. 839).

MIMOSA WEBWORM (Homadaula anisocentra) - ALABAMA - Marengo (p. 840).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - NORTH DAKOTA - Ransom (p. 834).

RED IMPORTED FIRE ANT (Solenopsis invicta) - TEXAS - Titus; GEORGIA - Oconee; SOUTH CAROLINA - York, Greenwood (p. 842).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - OREGON - Columbia, Washington, Clackamas, Yamhill, Marion, Polk, Benton, Linn, Lane, Douglas (p. 840).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - NORTH DAKOTA - McHenry (p. 838); Steele, Cavalier (p. 836); Kidder, McLean, Williams, Pembina, Pierce, Grand Forks, Walsh (p. 834).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - ALABAMA - Randolph (p. 834).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - NORTH DAKOTA - Grand Forks, Griggs, Nelson, Walsh, Golden Valley, Pembina, Cavalier, Mercer, Oliver, Morton, Burleigh; MARYLAND - Somerset (p. 834).

A WHITEFLY (Paraleyrodes naranjae) - HAWAII - Maui Island (p. 844).

WHITE PEACH SCALE (Pseudaulacaspis pentagona) - ALABAMA - Crenshaw (p. 839).

WEEDS

PURPLE STARThISTLE (Centaurea calcitrapa) - CALIFORNIA - Trinity (p. 836).

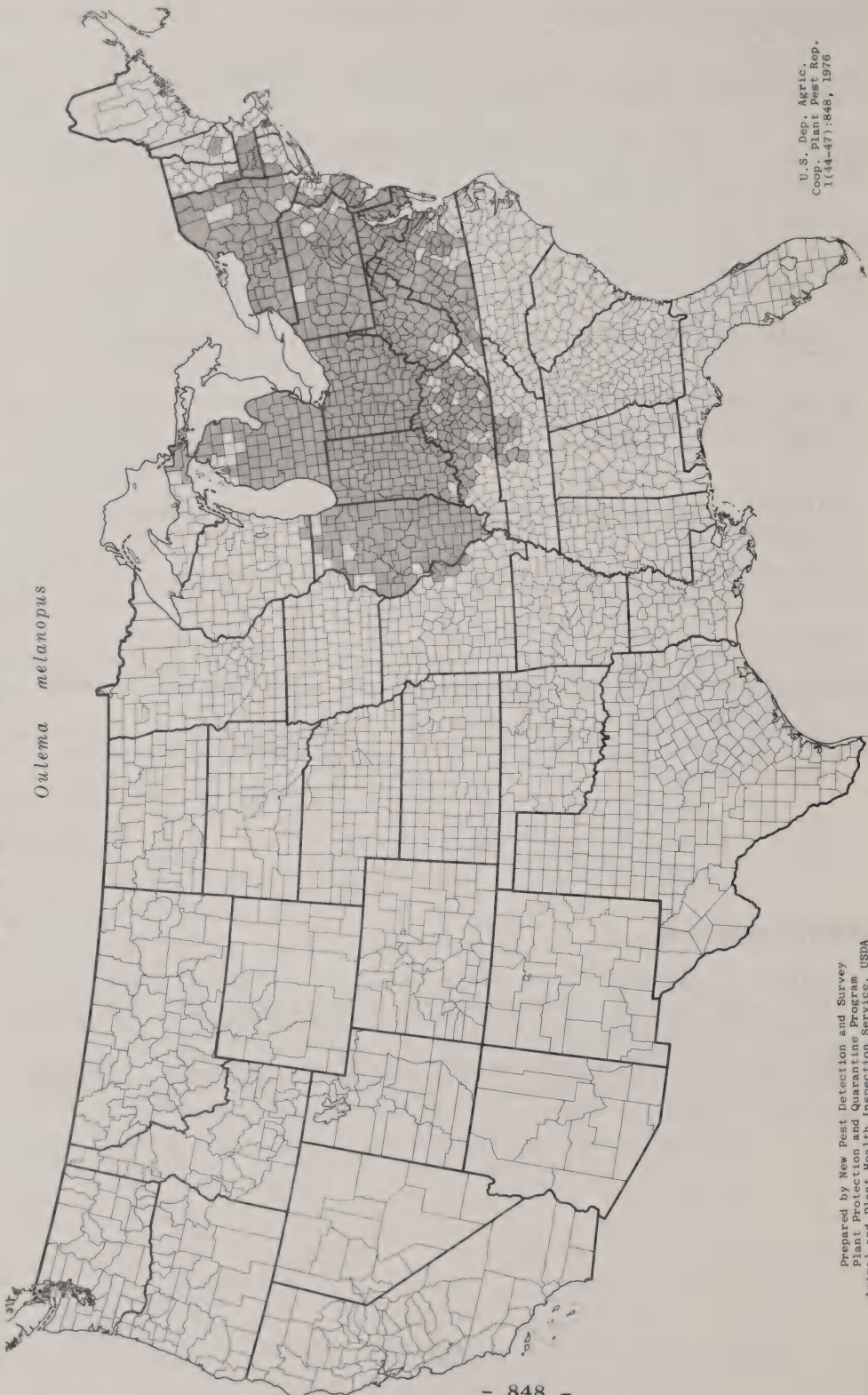
SPOTTED KNAPWEED (Centaurea maculosa) - CALIFORNIA - Mendocino (p. 843).

LIGHT TRAP COLLECTIONS

CALIFORNIA - Bellota, 11/2, 48-82 temp., BL - BLACK CUTWORM (Agrotis ipsilon) 15, ARMYWORM (Pseudaletia unipuncta) 80, FALL ARMYWORM (Spodoptera frugiperda) 1,914. Clements, 11/1, 42-78 temp., BL - Black cutworm 2, GRANULATE CUTWORM (Feltia subterranea) 8, VARIEGATED CUTWORM (Peridroma saucia) 1, armyworm 37, fall armyworm 715. FLORIDA - Gainesville, 11/5-11, BL, Black cutworm 9, granulate cutworm 2, armyworm 4, fall armyworm 1.

Distribution of Cereal Leaf Beetle

Oulema melanopus



Prepared by New Pest Detection and Survey
Plant Protection and Inspection Program
Animal and Plant Health Inspection Service, USDA
November 12, 1976

U.S. Dep. Agric.
Coop. Plant Pest Rep.
1(44-47):846, 1976

Reprinted from Weekly Weather and Crop Bulletin supplied by the National Weather Service, NOAA.

HIGHLIGHTS: Another week of cold weather clutched the eastern three-fourths of the United States. Average temperatures for the week were below normal in all areas east of the central Rockies. In west Texas, the central Plains, the Midwest, and Northeast, temperatures averaged 12 to 14 degrees below normal and many record temperatures were broken. Rain, heavy at times, fell in the West and Southwest. Snow began at midweek in the southern Rockies and moved eastward. Record amounts of 6 to 10 inches piled up in some areas of west Texas.

TEMPERATURES AND PRECIPITATION: Cold air pushing southward on Monday continued to produce snow showers in the Great Lakes area and beyond into the Ohio Valley. By midday, snow was accumulating in West Virginia, northeastern Ohio, and western Pennsylvania and by the end of the day it had spread into Maryland and Delaware. Wilmington, Delaware, reported the first snow of the season. A few rainshowers were reported in western Washington State and in northern Idaho. Temperatures plunged in the upper and middle Mississippi Valley and the western Great Lakes area Monday morning. Record low temperatures included 9 degrees at Dubuque, Iowa, and Green Bay, Wisconsin, 18 degrees at Fayetteville, Arkansas, and 24 degrees at Huntsville, Alabama. West of the Rockies, temperatures were still warmer than normal. The cold air continued to push into the southeastern States on Tuesday, bringing with it one of the coldest nights of the season. Minimum temperatures dropped into the 20's or lower from the Great Lakes region to northern Florida. Some of the significant record low temperatures were: Cleveland, Ohio--19 degrees, Philadelphia, Pennsylvania--23 degrees, Richmond, Virginia--17 degrees, Raleigh, North Carolina--16 degrees, Atlanta, Georgia--23 degrees, and Tampa, Florida--39 degrees. In contrast to the unseasonably cold weather in the East, the western portion of the Nation was enjoying mild weather. Snow showers in the Lakes area and from West Virginia through New England continued. Later, Tuesday, another cold front moved into the north-central United States and brought light snow to North Dakota and Minnesota. Elsewhere, light rainshowers fell west of the coastal mountains from northern California through Washington.

Temperatures moderated over most of the Nation on Wednesday morning. The weather was cold east of the Rockies but few records were broken. The only exceptions were southern Georgia and northern Florida where morning lows dipped into the 30's. Elsewhere, another cold outbreak was moving southward into the Plains. Light snow or rain fell from Montana and Wyoming eastward through the Lakes and from Ohio and Pennsylvania through New England. Later in the day showers and thunderstorms broke out from Oklahoma and east Texas to the lower Mississippi River. Showers continued from northwestern California through Washington. The cold breath of winter covered the north-central States Thursday morning and the cold air was moving rapidly southward. Snow began falling over northern Oklahoma and southern Kansas and spread eastward during the day. By late Thursday, snow was reported from the southern Appalachians through Tennessee and Kentucky to southeast Missouri and northern Arkansas

Pest Interceptions of Quarantine Significance at Ports of Entry

Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Coniothyrium atriplicinum</u> Wint. a fungi	imperfect on Atriplex seed	San Francisco	New Zealand	CA
<u>Uredo</u> sp. a rust	uredial on leaves of <u>Bucida</u> plants	Miami	Bahamas	FL
<u>Dacus dorsalis</u> Hendel oriental fruit fly	larval in mangos from baggage	Hilo	Hawaii	CA
<u>Ips sexdentatus</u> (Boerner) a scolytid beetle	adult under bark on crates of marble	Charleston	Italy	GA
<u>Kalotermes flavicollis</u> (Fabricius) a termite	adult with wood crates of marble	Tampa	Italy	FL
<u>Kalotermes flavicollis</u> (Fabricius) a termite	adult in wood crates of cargo	New York	Italy	MA
<u>Lampides boeticus</u> (Linnaeus) a lycaenid moth	larval with vegetables from baggage	Boston	Jordan	MA
<u>Phloeosinus rudis</u> Blandford a scolytid beetle	all under bark of wood dunnage	Hoboken	Japan	NY

	<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Rhyncolus sp.</u> a curculionid beetle	adult	in wood crates of glass	New York	Germany	CT
<u>Taphrorhynchus villifrons</u> (Dufour) a scolytid beetle	adult larval	in wood crates of steel	Savannah	France	USA
<u>Trogoderma granarium</u> Everts <u>Khapra beetle</u>	larval	with rice in ship stores	Phila - delphia	Pakistan	--
<u>Vinsonia stellifera</u> (Westwood) a diaspidid scale	adult	on plants from baggage	San Juan	Puerto Rico	CA
<u>Helicella maritima</u> (Draparnaud) a snail	adult	in baggage as food	Kennedy Airport NY	Italy	FL
<u>Helicella protea</u> (Ziegler) a snail	adult	with military cargo	Charleston	Turkey	GA
<u>Heterodera avenae</u> Woll. oat cyst nematode	cyst	with soil containing air-craft parts	Monroe	Spain	NC
<u>Heterodera sp.</u> (Schachtii group) a nematode	cyst	with soil containing ⁴¹ Sempervivum plants	Hoboken	England	OH

and began spreading toward the middle Atlantic Coast. Showers and thunderstorms continued along the Gulf Coast and lower Mississippi Valley. Snow blanketed the southern Appalachians and through Virginia and Maryland Friday morning as a storm system moved off the Atlantic Coast. Elsewhere, a low pressure center moved into southwestern United States from the Pacific. As the low moved rapidly eastward, showers and thundershowers occurred in California and Arizona. Then, as the system contacted colder air, snow began falling in New Mexico and west Texas. A large high pressure area centered over South Dakota continued to bring cold temperatures to most of the Nation. Afternoon readings from New England into the Plains and Rockies were only in the 20's and 30's. The cold air reached toward the Gulf Coast States by late Friday.

Snow, heavy at times, fell Saturday throughout the southern Rockies and southwestern Plains. Cold rain and drizzle spread eastward to east Texas and Louisiana. Freezing rain iced Arkansas. The snow in west Texas broke records as up to 10 inches piled up in some areas. In El Paso, Texas, 6 inches was the largest amount for so early in the season since 1889. Elsewhere another system moving onshore in the Northwest brought more rain and showers from central California through Washington. Meanwhile, the cold air advanced to cover the entire United States from the Rockies eastward. Record low temperatures Saturday morning included: Concord, New Hampshire--5 degrees, Concordia, Kansas--8 degrees, Lake Charles, Louisiana--35 degrees and Columbia, South Carolina--28 degrees. The high temperature for the day reached only 36 degrees at Houston, Texas. The precipitation area continued moving eastward Sunday as moist air from the gulf was lifted over the cold dome of air dominating the Nation. Snow and sleet extended from southeast Kansas and eastern Oklahoma across southern Missouri, northern Arkansas, Tennessee, and the mountains of northern Georgia. Rain fell south of these areas from the upper Texas coast through the southern States. In the West, rain pushed south along the California coast and into the Great Basin. Cold temperatures remained entrenched over much of the Midwest and East. High temperatures in the Texas Panhandle and southern Plains remained in the 20's and stayed in the 30's in Arkansas, Tennessee, and the northern sections of Mississippi and Alabama.

NATIONAL WEATHER SERVICE 30-DAY OUTLOOK MID-NOVEMBER TO MID-DECEMBER

The National Weather Service's 30-day outlook for mid-November to mid-December is for temperatures to average below seasonal normals in most areas east of the Continental Divide and over the southern Rocky Mountains. In unspecified areas, near normal temperatures are in prospect. Precipitation is expected to exceed the median amount from the south Pacific coast eastward through the southern Plateau region and the southern Great Plains to the south Atlantic coast. Elsewhere, less than the median value is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price \$5.00 a year.

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New Geographical and Seasonal Distribution
Records for Fifty-three Species and
Subspecies of Virginia Tabanids

5 (Diptera: Tabanidae)

William A. Allen 1/ and L.L. Pechuman 2/

Fifty-three tabanid species and subspecies are listed with 115 new county records. The data include seasonal distribution in counties previously known to be infested. Chrysops beameri Brennan was collected feeding on a dog. Males of Chrysops obsoletus Wiedemann, Tabanus molestus mixis Philip, Tabanus quinquevittatus Wiedemann, and Tabanus subsimilis subsimilis Bellardi are reported. Specimens taken from blacklight traps include Leucotabanus annulatus (Say), Tabanus fulvulus Wiedemann, Tabanus sackeni Fairchild, and Tabanus subsimilis subsimilis Bellardi. All specimens were adults and were determined by L.L. Pechuman. New locality records are designated by an asterisk(*). All independent cities also have a county designation to preserve geographic continuity. References to publications listing previous records of tabanid distribution in Virginia are listed.

Chrysops atlanticus Pechuman. Independent City of Suffolk, Nansemond County, SGM, June 14, 1975; and Independent City of Virginia Beach, Princess Anne County, SEH, July 8, 1974.

Chrysops beameri Brennan. Feeding on dog in Montgomery County, E.L. Allen, July 27, 1975.

Chrysops callidus Osten Sacken. Brunswick County*, WAA, May 25, 1975; Essex County*, WAA, June 4, 1975; Giles County* (Mountain Lake Biological Station, 4,000-foot elev.), G. Byers, July 2, 1969; Pittsylvania County*, GLC, July 8, 1975; Shenandoah County*, WAA, June 5, 1975; Westmoreland County, WAA, June 4, 1975; and Independent City of Suffolk, Nansemond County, WIK, June 13, 1975.

Chrysops celatus Pechuman. Single female from Independent City of Virginia Beach*, Princess Anne County, SGM, summer of 1972.

Chrysops cincticornis cincticornis Walker. Three adults from Southampton County*, WAA, May 28, 1975 3/.

Chrysops cuclux Whitney. Giles County*, G. Byers, June 29, 1967; and Wythe County*, LLP, June 10, 1974.

Chrysops dimmocki Hine. Independent City of Chesapeake, Norfolk County, SGM, June 6, 1975; and Independent City of Suffolk, Nansemond County, SGM, June 14, 1975.

1/ Extension Specialist, Insect Survey, Department of Entomology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061

2/ Professor of Entomology, Department of Entomology, Cornell University, Ithaca, New York 14853

3/ Collected in Pechuman canopy trap.

Chrysops flavidus Wiedemann. Essex County*, WAA, July 22, 1975; Westmoreland County, WAA, June 4, 1975; Independent City of Chesapeake, Norfolk County, SGM, June 6, 1975; and Independent City of Suffolk*, Nansemond County, WIK, June 14 and 15, 1975 3/.

Chrysops geminatus geminatus Wiedemann. Collected by GLC from Franklin County*, June 25, 1975; and from Henry County*, July 3, 1975.

Chrysops hinei Daecke. One adult from Independent City of Norfolk*, Norfolk County, SGM, September 2, 1959.

Chrysops indus Osten Sacken. One adult from Augusta County*, WAA, May 27, 1975.

Chrysops macquarti Philip. Independent City of Suffolk, Nansemond County, WIK, June 13 and 14, 1975, and by SGM, June 14, 1975.

Chrysops moechus Osten Sacken. One adult feeding on human in Montgomery County*, by MWA, July 10, 1975.

Chrysops montanus Osten Sacken. One adult from Westmoreland County* by WAA, June 4, 1975.

Chrysops niger Macquart. Augusta County*, WAA, May 27, 1975; Essex County*, WAA, June 4, 1975; King George County*, WAA (Collected dead, no date); King William County*, WAA, June 4, 1975; Montgomery County by WAA, May 24, 1975, and June 16, 1975, by MWA, June 1, 1975, and by E.L. Allen, June 4, 1975; Roanoke County*, AFB, May 17, 1975; Southampton County*, WAA, May 28, 1975 3/; and Independent City of Virginia Beach, Princess Anne County, SGM, June 4, 1975.

Chrysops obsoletus Wiedemann. Essex County*, WAA, July 22, 1975; and Independent City of Lynchburg*, Campbell County, SGM, July 22, 1975. A male from Independent City of Virginia Beach, Princess Anne County, unidentified collector, June 24, 1960.

Chrysops pikei Whitney. Prince George County*, WAA, May 27, 1975; and Independent City of Suffolk, Nansemond County, WIK, and SGM, June 14, 1975.

Chrysops reicherti Fairchild. Hanover County*, WAA, June 4, 1975; and Independent City of Virginia Beach, Princess Anne County, unidentified collector, August 15, 1974.

Chrysops shermani Hine. One adult in Wythe County*, LLP, June 10, 1974.

Chrysops univittatus Macquart. One adult from Pittsylvania County*, GLC, July 8, 1975.

Chrysops vittatus vittatus Wiedemann. Leesburg, Loudoun County*, W.J. Brown, July 1973; Prince George County*, WAA, June 30, 1975; and Independent City of Suffolk, Nansemond County, WIK, June 13 and 14, 1975, and by JWJ, July 4, 1975.

Chrysops vittatus floridanus Johnson. Two adults from Independent City of Suffolk*, Nansemond County, WIK, June 14, 1975.

3/ Collected in Pechuman canopy trap.

Diachlorus ferrugatus (Fabricius). Adults from Independent City of Chesapeake*, Norfolk County, SGM, June 24, 1975; and Independent City of Virginia Beach, Princess Anne County, unidentified collector, June 12, 1974.

Chlorotabanus crepuscularis (Bequaert). Independent City of Suffolk*, Nansemond County, SGM, June 16, 1974, and June 14, 1975, and by WIK, June 13, 14 and 15, 1975 3/; and Independent City of Virginia Beach, Princess Anne County, unidentified collector, June 24, 1960.

Leucotabanus annulatus (Say). Farmville, Prince Edward County*, SGM, July 22, 1959; Independent City of Chesapeake, Norfolk County, WAA, July 30, 1975 4/; Independent City of Suffolk*, Nansemond County, JWJ, August 6, 1975 4/; Independent City of Virginia Beach, Princess Anne County, SGM, July 15, 1975, and by WAA, July 15, 22 and 29, and August 5, 1975 4/.

Hybomitra daeckei (Hine). Essex County, WAA, June 4, 1975.

Hybomitra difficilis (Wiedemann). Augusta County*, WWS, June 19, 1975; Halifax County, WAA, May 28, 1975; Hanover County*, SGM, June 17, 1975; Henry County, WAA, May 29, 1975; and Wythe County*, LLP, June 10, 1975.

Hybomitra lasiophthalma (Macquart). Prince George County*, WAA, May 27, 1975; Southampton County*, WAA, May 28, 1975 3/; and York County*, SGM, May 15, 1975.

Tabanus americanus Forster. Botetourt County, GLC, August 17, 1974; Gloucester County*, WAA (collected dead, no date); Middlesex County*, WAA, July 22, 1975; Independent City of Suffolk, Nansemond County, SGM, August 13, 1975; and Independent City of Virginia Beach, SGM, summer of 1972 and July 21, 1975.

Tabanus atratus atratus Fabricius. Essex County*, WAA, August 26, 1975; Montgomery County, R.L. Pienkowski, August 2, 1975, and by MWA, August 14, 1975; Roanoke County*, AFB, May 17, 1975; and Independent City of Virginia Beach, Princess Anne County, SGM, 1972.

Tabanus calens Linnaeus. One adult collected at Maggie, Craig County, by S.W. Bullington, August 19, 1973.

Tabanus catenatus Walker. One adult from Montgomery County*, by AFB, June 26, 1974.

3/ Collected in Pechuman canopy trap.

4/ Collected in 15-watt fluorescent blacklight trap.

Tabanus fulvulus Wiedemann. Gloucester County*, WAA, July 22, 1975; Greenville County*, SGM, July 3, 1975; Middlesex County*, WAA, July 22, 1975; Montgomery County*, KJS (collected dead, no date); Pittsylvania County, GLC, July 8, 1975; Prince George County, WAA, June 30, 1975; Southampton County*, SGM, July 3, 1975; Independent City of Norfolk*, Norfolk County, E.R. Wyde, July 1, 1960; and Independent City of Suffolk, Nansemond County, WIK, June 15, 1975 4/.

Tabanus fusconervosus Macquart. Independent City of Suffolk*, WIK, June 15, 1975 3/.

Tabanus imitans imitans Walker. One adult collected dead from Gloucester County*, WAA, July 22, 1975.

Tabanus lineola Fabricius. Melanistic form adults from Botetourt County*, GLC, July 21, 1975; Brunswick County*, WAA, May 25, 1975; Chesterfield County*, unidentified collector, July 13, 1960; Essex County, WAA, June 4, 1975; Gloucester County*, WAA, July 22, 1975; Halifax County, WAA, May 28, 1975; Henrico County*, WAA, June 4, 1975; King and Queen County, WAA, June 4, 1975; King William County*, WAA, June 4, 1975; Lancaster County*, WAA, August 26, 1975; Middlesex County*, WAA, July 22, 1975; New Kent County, WAA, August 12, 1975; Nottoway County, WAA, July 16 and 30, 1975; Prince George County, WAA, May 27, 1975; Roanoke County*, AFB, May 17, 1975; Southampton County, WAA, May 28, 1975 3/; and Independent City of Suffolk, Nansemond County, WIK, June 13, 14 and 15, 1975 3/, and by JWJ, July 17, 1975. Adults of salt marsh form in Lancaster County*, WAA, August 26, 1975; and Middlesex County*, WAA, July 22, 1975.

Tabanus melanocerus Wiedemann. Gloucester County*, WAA, July 22, 1975; Lancaster County*, WAA, August 26, 1975; Middlesex County*, WAA, July 22, 1975; New Kent County*, WAA, August 12, 1975; Northumberland County*, WAA, July 23, 1975; Pittsylvania County*, GLC, July 8, 1975; and Westmoreland County*, WAA, July 23, 1975.

Tabanus molestus molestus Say. Gloucester County, WAA, July 22, 1975; Prince George County*, WAA, June 30, 1975; Roanoke County*, W.D. Jones, June 21, 1975; Independent City of Suffolk*, Nansemond County, WIK, June 13 and 15, 1975 3/; and Independent City of Virginia Beach, Princess Anne County, SEH, July 1974, and by unidentified collector, July 6, 1960.

Tabanus molestus mixis Philip. Gloucester County*, WAA (collected dead on July 22, 1975); one male from Henry County, GLC, July 3, 1975; Southampton County*, WAA, May 28, 1975 3/; and Independent City of Chesapeake*, Norfolk County, SGM, June 6, 1975.

Tabanus nigrescens Palisot de Beauvois. Nottoway County*, WAA, July 16, 1975.

3/ Collected in Pechuman canopy trap.

4/ Collected in 15-watt fluorescent blacklight trap.

Tabanus nigripes Wiedemann. Botetourt County*, GLC, July 21, 1975; Brunswick County*, WAA, May 25, 1975; Essex County*, WAA, June 4, 1975; Henry County, GLC, August 22, 1974; Middlesex County*, WAA, July 22, 1975; and Nottoway County*, WAA, August 26, 1975.

Tabanus nigrovittatus Macquart. One adult from Independent City of Portsmouth, Norfolk County, unidentified collector, June 27, 1960.

Tabanus pallidescens Philip. Henry County*, GLC, July 3, 1975; and Southampton County*, WAA, May 28, 1975 3/.

Tabanus petiolatus Hine. Independent City of Suffolk*, Nansemond County, by WIK, June 14 and 15, 1975 3/, and by JWJ, July 28, 1975.

Tabanus pumilus Macquart. Essex County*, WAA, June 4, 1975; Franklin County*, GLC, June 25, 1975; Henrico County*, WAA, June 4, 1975; King George County*, WAA, May 27, 1975; Southampton County*, WAA, May 28, 1975; Independent City of Chesapeake*, Norfolk County, SGM, June 6, 1975; and Independent City of Suffolk*, Nansemond County, WIK, June 13, 14 and 15, 1975 3/.

Tabanus quinquevittatus Wiedemann. Botetourt County*, GLC, July 11 and 21, 1975; Montgomery County, KJS, July 31, 1975; Warren County*, WWS, June 25, 1975; and Independent City of Suffolk, Nansemond County, WIK, June 15, 1975 3/, and one male by JWJ, July 26, 1975.

Tabanus reinwardtii Wiedemann. Middlesex County*, WAA, July 22, 1975.

Tabanus sackeni Fairchild. Botetourt County*, GLC, July 12, 1975 4/; and Giles County*, WAA, August 21, 1975.

Tabanus sagax Osten Sacken. One adult collected dead in Montgomery County*, by KJS in 1975.

Tabanus sparus milleri Whitney. Botetourt County*, GLC, July 21, 1975; Brunswick County*, WAA, May 25, 1975; Franklin County, GLC, June 25, 1975; Prince George County, WAA, May 27, 1975; and Southampton County*, WAA, May 28, 1975 3/.

Tabanus subsimilis subsimilis Bellardi. Brunswick County*, WAA, May 25, 1975; two males from Chesterfield County*, WAA, July 15, 1975 4/; Fluvanna County*, WAA, August 26, 1975; Montgomery County*, KJS (collected dead, 1975); Independent City of Norfolk, Norfolk County, unidentified collector, September 1960; Independent City of Portsmouth, Norfolk County, unidentified collector, June 27, 1960; and Independent City of Virginia Beach, Princess Anne County, unidentified collectors, July 16, 1959, and summer of 1972, and by WAA, September 9, 1975 4/.

3/ Collected in Pechuman canopy trap.

4/ Collected in 15-watt fluorescent blacklight trap.

Tabanus sulcifrons Macquart. Adults of this complex from Botetourt County, GLC, July 22, 1975, and August 17, 1975; Fluvanna County*, WAA, August 26, 1975; Lancaster County*, WAA, August 26, 1975; Middlesex County*, WAA, July 22, 1975; Montgomery County, KJS, July 31, 1975, and by R.L. Pienkowski, August 4, 1975; Westmoreland County*, WAA, July 23, 1975; and Independent City of Norfolk, Norfolk County, unidentified collector, September 1959.

Tabanus trimaculatus Palisot de Beauvois. Brunswick County*, WAA, May 25, 1975; Chesterfield County*, W.H. Matheny, June 9, 1975; Independent City of Suffolk, Nansemond County, WIK, June 15, 1975 3/; and Independent City of Virginia Beach, Princess Anne County, unidentified collector, June 22, 1960.

3/ Collected in Pechuman canopy trap.

Abbreviations for collectors listed 3 times or more

AFB, A.F. Buckman; GLC, G.L. Clement; JWJ, J.W. Jenkins, KJS, K.J. Surles; LLP, L.L. Pechuman; MWA, M.W. Allen; SEH, S.E. Hodges; SGM, S.G. McCausland; WAA, W.A. Allen; WIK, W.I. Knausenberger; WWS, W.W. Surles.

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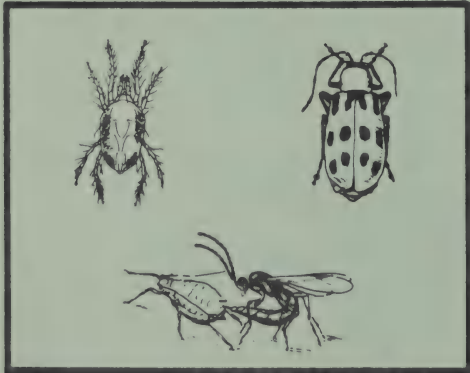
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Cooperative PLANT PEST REPORT

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This publication is distributed weekly to Federal and State agencies, universities, farmers, and others interested in containing or controlling pests in the United States.

Data included in this publication are compiled from reports submitted by cooperating State, Federal and other agricultural and industrial specialists. Accuracy of the reports is not verified prior to publication.

Cooperative Plant Pest Report supersedes *Cooperative Economic Insect Report*, which was discontinued with Volume 25, Numbers 49-52, 1975.

Correspondence should be directed to:

CPPR

New Pest Detection and Survey Staff
Plant Protection and Quarantine Programs
Animal and Plant Health Inspection Service
U.S. Department of Agriculture
Federal Building #1
Hyattsville, Maryland 20782

COOPERATIVE PLANT PEST REPORT**HIGHLIGHTS**Current Conditions

CORN ROOTWORMS predicted to be moderate to severe in 1977 in parts of Illinois. (p. 861).

Peanut losses due to POD AND PEG ROTS heavy in 4 southern counties of Oklahoma. (p. 862).

Detection

● AN ENCYRTID WASP in Florida is a new United States record. (p. 866).

● AN ICHNEUMONID WASP is a new United States record in Hawaii, not known to occur in the continental U.S. (p. 869).

● First active infestation of GYPSY MOTH in Wisconsin. (p. 867).

New State records include a FALSE SPIDER MITE in Oklahoma (p. 862), a LEAFHOPPER in Indiana (p. 863), a SCOLYTID BEETLE in Kansas (p. 864), a WEEVIL in Nevada (p. 864), HYDRILLA in California (p. 866), and an ANT in Hawaii (p. 869).

For new county records see pages 871-872.

Alfalfa is a new host for VERTICILLIUM WILT in the United States. (p. 862).

Purple heart is a new host for a NOCTUID MOTH in California. (p. 864).

Special Reports

Estimates of Damage by the European Corn Borer to Grain Corn in the United States in 1975. (pp. 873-874).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods - 1975 (pp. 875-893).

Distribution of Alfalfa Weevil (map) (p. 896).

Pests Not Known to Occur in the United States. Pacific Rice Chinch Bug (Dimorphopterus pilosus (Barber)) (pp. 897-899).

Honey Bees (Apis spp.) likely to be Intercepted at Quarantine Stations. (pp. 900-902).

Reports in this issue are for the weeks ending November 19 through December 10 unless otherwise indicated.

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SPECIAL PESTS OF REGIONAL SIGNIFICANCE

INSECTS

BEEET LEAFHOPPER (Circulifer tenellus) - CALIFORNIA - Late summer rains from tropical storm Kathlene left much of Imperial Valley with flood damage. Rains germinated annuals over much of west side breeding grounds and scattered areas of east side breeding area. High of 4 adults per 10 sweeps on annuals on west side. First and second instar nymphs found last period. First time nymphs found as early as November. Roadside treatments continued in northwest Bakersfield, Kern County. Fog slowed operations in Fresno County with 192 acres being treated week ending November 19. Total of 378 acres treated at Raisin City, Helm, and Burrel areas of Fresno County week ending November 26. Russian thistle large and dense in some areas making ground treatment difficult. Roadside weeds still treated in Kern County along with patches of weeds in Pumpkin Center area. (CA Pest Rep.).

GREENBUG (Schizaphis graminum) - TEXAS - Up to 5 per row foot on small grains in Archer, Baylor, Childress, Foard, Jones, Knox, Motley, and Wilbarger Counties week ending December 3. Ranged 60-80 per row foot in field in Hardeman County and several fields in Dickens County; light in most fields. Light in Williamson and Milam Counties. (Boring, Glodt). OKLAHOMA - Generally very light on wheat in southwest counties week ending November 19. Heaviest, 10 per row foot in southern Kiowa County. Light scattered infestations in west-central counties. Counts per row foot of wheat by county week ending December 3: Mayes averaged 7, Caddo 4-6, Washita up to 4. (OK Coop. Surv.). KANSAS - Heaviest, averaged 2 per row foot of wheat in Cloud County and one per row foot in Mitchell County week ending November 19. (Bell).

CORN, SORGHUM, SUGARCANE

INSECTS

CORN ROOTWORMS (Diabrotica spp.) - ILLINOIS - NORTHERN CORN ROOTWORM (D. longicornis) and WESTERN CORN ROOTWORM (D. virgifera) - expected to be moderate to severe in 1977 on continuous corn in counties north of line from Pittsfield, Pike County, to Decatur, Macon County, to Danville, Vermillion County. Light to moderate damage expected in some continuous corn in south-central counties north of line from Collinsville, Madison County, to Paris, Edgar County. Potential damage light south of this line. Predictions based on survey of corn rootworm populations in August 1976. Percent of surveyed fields in northern third of State averaging one or more beetles per plant (greatest potential for damage) was 86 percent compared with 42 percent in 1975. (IL Surv. Bull.). INDIANA - D. virgifera adult collected on corn at Bobtown, Jackson County, July 27, 1976, by C. Yeager. Determined by F.T. Turpin. This is a new county record. (Meyer).

SOUTHWESTERN CORN BORER (Diatraea grandiosella) - NEW MEXICO - Two larvae collected from cornstalks at Los Lunas, Valencia County, November 11, 1976, by D.C. Heninger. First collection in central area since severe freeze of 1972. (NM Pest Rep.). OKLAHOMA - Overwintering larvae common in corn stubble in Garvin County week ending December 3. Girdled stalks averaged 65 percent in one field near Stratford. Many stalks lodged and much corn left in field after harvest. (OK Coop. Surv.).

SMALL GRAINS

INSECTS

HESSIAN FLY (Mayetiola destructor) - OKLAHOMA - Puparia light in some wheat fields in Garvin, Murray, and Stephens Counties week ending December 3. (OK Coop. Surv.). KANSAS - Puparia (35 percent) and larvae (65 percent) ranged 1-8 (averaged 1.5) per tiller on 12 percent of tillers in early 6-inch wheat (7 tiller stage) in Montgomery County week ending November 19. (Bell).

WHEAT STEM MAGGOT (Meromyza americana) - KANSAS - Larvae half to full grown on 4.4 percent of tillers in early 6-inch wheat in Montgomery County. (Bell).

TURF, PASTURES, RANGELAND

INSECTS

A FALSE SPIDER MITE (Dolichotetranychus carnea) - OKLAHOMA - Infested 1-2 percent of stems of roadside Bermudagrass 11 miles west of Buffalo, Harper County, September 21, 1976. Collected by D.C. Arnold. Determined by E.W. Baker. This is a new State record. (OK Coop. Surv.).

FORAGE LEGUMES

DISEASES

VERTICILLIUM WILT (Verticillium albo-atrum) - Found in new host for the United States. Collections from alfalfa in north-central OREGON and in central and western WASHINGTON by R.N. Peaden and D.W. Evans in early September 1976. Determined by J. Graham; confirmed by I. Isaac. Infected alfalfa in Europe becomes nonproductive after 2 harvest years. (Graham).

PEANUTS

DISEASES

POD AND PEG ROTS - OKLAHOMA - Pythium spp. and Pellicularia filamentosa continued extensive damage to peanuts still in field week ending November 19. Appears most severe on dryland peanuts. Losses heavy in Caddo, Hughes, Carter, and Love Counties. (OK Coop. Surv.).

POTATOES, TOMATOES, PEPPERS

DISEASES

COTTON ROOT-KNOT NEMATODE (Meloidogyne incognita) - OKLAHOMA - Very heavy on greenhouse tomatoes in Okmulgee County week ending November 19. (OK Coop. Surv.).

COLE CROPS

DISEASES

PARASITICA DOWNY MILDEW (Peronospora parasitica) - CALIFORNIA - Severely infected broccoli field week ending November 26 in Imperial Valley, Imperial County. First report on broccoli leaves and curd in valley. Known to infect cabbage, cauliflowers, and other crucifers. (CA Pest Rep.).

CUCURBITS

INSECTS

WESTERN CORN ROOTWORM (Diabrotica virgifera) - INDIANA - Adult on cucumbers at Indianapolis, Marion County, July 14, 1976. Collected and determined by J. Clark. This is a new county record. (Clark).

GENERAL VEGETABLES

INSECTS

VEGETABLE LEAFMINER (Liriomyza munda) - FLORIDA - Mines averaged 640 per plant in commercial field of market-ready celery near Belle Glade, Palm Beach County, November 12. Averaged 519 per plant in another field in area. Celery marketable after extra trimming. (FL Coop. Surv.).

A LEAFHOPPER (Scaphoideus opalinus) - INDIANA - Found on Jerusalem-artichoke at Indianapolis, Marion County, August 2, 1976. Collected by J. Clark. Determined by R. Heaton. This is a new State record. (Clark).

DECIDUOUS FRUITS AND NUTS

INSECTS

WESTERN PEACHTREE BORER (Sanninoidea exitiosa) - NEW MEXICO - Infested 95 percent of peach trees examined at Los Lunas, Valencia County week ending December 10. (NM Pest Rep.).

RUSTIC BORER (Xylotrechus colonus) - ALABAMA - Larvae heavy, destroyed cambium layer of several large pecan trees in 200-acre orchard at Loxley, Baldwin County, week ending November 26, 1976. Orchard previously damaged by PECAN CARPENTERWORM (Cossula magnifica) and hurricane Eloise in late 1975. (Hagler, Strother).

SMALL FRUITS

INSECTS

GRAPE ROOT BORER (Vitacea polistiformis) - ALABAMA - Larvae infested and destroyed root system of one grapevine in 15-acre vineyard at Cullman, Cullman County. Collected by B. Spears and T.B. Hagler, November 19, 1976. Determined by H.F. McQueen. This is a new county record. (Hagler).

ORNAMENTALS

INSECTS

A WEEVIL (Scyphophorus acupunctatus) - NEVADA - Collected on Yucca sp. at Mt. Springs Summit, Clark County, August 2, 1959, by F.D. Parker. Determined by R.C. Bechtel. This is a new State record. Subsequent collection on Yucca sp. at Riverside, Clark County, by R.C. Bechtel and D.F. Zoller, May 13, 1970. (Bechtel).

A NOCTUID MOTH (Mouralia tinctoides) - CALIFORNIA - Larvae fed on stems and leaves of Setcreasea purpurea (purple heart) at cemetery in San Jose, Santa Clara County. Collected by E. Winkler, November 9, 1976. Determined by R. Somerby. This is a new host and county record for State. (CA Pest Rep.).

BEET ARMYWORM (Spodoptera exigua) - OHIO - Apparently established in greenhouse at Steubenville, Jefferson County. Larvae damaged 10,000 chrysanthemums per week in August. Adults obtained by blacklight trapping in greenhouse and by rearing larvae infesting chrysanthemums. Earlier report many years ago from Cleveland, Cuyahoga County, greenhouse. Collected by K.D. Simeral. Determined by E.L. Todd. (Rings, Lindquist).

A SPIDER MITE (Eotetranychus lewisi) - FLORIDA - All stages heavy on all 1,275 poinsettia plants at nursery in New Smyrna Beach area, Volusia County, December 1. (FL Coop. Surv.).

AN APHID (Cerataphis variabilis) - FLORIDA - Moderately infested 50 percent of 500 Howea forsteriana (Kentia palms), at commercial landscape company at Dania, Broward County, November 29. (FL Coop. Surv.)

FOREST AND SHADE TREES

INSECTS

A SCOLYTID BEETLE (Leperisinus californicus) - KANSAS - Adults collected from ash at Hugoton, Stevens County, by H.E. Thompson, August 11, 1976. Determined by D.M. Anderson. This is a new State record. (Bell).

A SCOLYTID BEETLE (Xylosandrus compactus) - ALABAMA - Collected on dogwood, hickory, and baldcypress at Spanish Fort, Daphne, Fairhope, and Lillian, all in Baldwin County, by T. Lemons and L. W. Lockhart, November 23, 1976. Collected from dogwood at Nokomis, Escambia County, November 24. Infested twigs of sweetgum trees at Belleville, Conecuh County, December 1. Both collected by T. Lemons. All determined by H.F. McQueen. All are new county records. (McQueen).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NORTH DAKOTA - Adults collected on sticky board traps at Bottineau, Bottineau County, by A. Tagestad, September 30, 1976. Determined by R. Carlson, This is a new county record. (Tagestad).

A SIRICID WASP (Eriotremex formosanus) - FLORIDA - Adult obtained from Malaise trap 10 miles east of Lake City, Columbia County, August 20, 1976. Collected by J.R. Wiley. Determined by E.E. Grissell. This is a new county record. (FL Coop. Surv.).

A CICADA (Okanagana rimosa) - WISCONSIN - Collected from maple and basswood at Keshena, Menominee County, by S. Banash, July 11, 1976. Determined by J.P. Kramer. This is a new county record. Species limited mostly to northern counties but recorded in Dane and Sauk Counties in south-central area. (WI Pest Surv.).

GRAPE SCALE (Diaspidiotus uvae) - ALABAMA - Collected on Platanus occidentalis (American sycamore) at Montgomery, Montgomery County, April 21, 1976, by M.L. Williams. Determined by M.L. Williams. This is a new county record. (McQueen).

FORBES SCALE (Quadraspidotus forbesi) - ALABAMA - Collected on Osmanthus americanus (devilwood) at Eufaula, Barbour County, March 23, 1976, by C.H. Ray. Determined by M.L. Williams. This is a new county record. (McQueen).

MAN AND ANIMALS

INSECTS

FACE FLY (Musca autumnalis) - ALABAMA - Adults collected in these counties for new county records in July: Cullman - just south of Hulaco on beef; Blount - near Baileytown, north of Blountsville, and at Cleveland on dairy and beef; St. Clair - south of Ashville and about 3 miles north of Pell City on beef; Talladega - on beef, city unknown; Clay - north of Ashland and in Mellow Valley on beef and horses; Randolph - north of Wadley on beef; Chambers - Abanda, Milltown, north of Penton, and south of Lafayette on dairy, beef, and horses. All collected and determined by G.R. Mullen. (McQueen).

HORN FLY (Haematobia irritans) - FLORIDA - Averaged 557 per beef animal on crossbred steers and heifers at Belle Glade, Palm Beach County, November 15. Averaged 96 per animal in small beef herd near Gainesville, Alachua County, November 18. (FL Coop. Surv.).

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Ranged 1-15 per head on 56 of 78 dairy heifers and 10 of 32 mature cows week ending November 24. Averaged about 3 per infested animal. Ranged 0-12 per head on cattle in Texas County. Nearly full-grown larvae heavy in backs of young cattle checked in Comanche County week ending December 3. Light to moderate in Noble County. Counts per head in Payne County week ending December 10: Up to 17 (average 4.3) on 46 heifers, 0-19 (average 3.7) on 28 mature cows, and 12-28 (average 20) on 2 bulls. (OK Coop. Surv.).

SHEEP BOT FLY (Oestrus ovis) - NORTH DAKOTA - First instar larvae (averaged 15 per head) infested 50 percent of 12 sheep at Fargo, Cass County; Kentyre, Emmons County; Cavalier, Pembina County; and Mayville, Traill County, week ending November 19. First instars 19-50 (averaged 32.6) per head on 60 percent of 5 sheep in Cass County week ending December 3. (Meyer).

LONGNOSED CATTLE LOUSE (Linognathus vituli) - MISSISSIPPI - Adults 4-8 per head on 40 crossbred cattle in Noxubee County week ending December 10. (Anderson).

EAR TICK (Otobius megnini) - OKLAHOMA - Heavy in ears of calf herd checked in Comanche County week ending December 3. (OK Coop. Surv.).

MISCELLANEOUS WILD PLANTS

WEEDS

HYDRILLA (Hydrilla verticillata) - CALIFORNIA - New aquatic weed found at Marysville, Yuba County, by R. Yeo in early October. Determined by D.B. Ward. This is a new State record. Infestation in 31-acre lake in center of Marysville. Threatens not only water storage and transfer systems but rice areas of State. (CA Pest Rep.).

BENEFICIAL ORGANISMS & THEIR ENEMIES

INSECTS

AN ENCYRTID WASP (Ooencyrtus chrysopae Crawford) - FLORIDA - Adults parasitized eggs of Chrysopa sp. (a green lacewing) at Melrose Park, Fort Lauderdale, Broward County. Collected by R. Schimmel, September 7, 1976. Determined by A.G. Gordh. This is a new United States record. Additional adults collected at same locality on Chrysopa eggs September 7, 27, and November 22 by R. Schimmel. Determined by E.E. Grissell. Described from Trinidad (FL Coop. Surv.).

A PUNCTUREVINE STEM WEEVIL (Microlarinus lypriformis) - OKLAHOMA - Two adults reared from puncturevine stems collected near Watonga, Blaine County, October 6, 1976. Collected and determined by D.C. Arnold. This is a new county record. (OK Coop. Surv.).

FEDERAL AND STATE PROGRAMS

INSECTS

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Increased from 30.65 to 58.32 males per trap at Porterville, Tulare County, week ending November 19. Cooling weather either slowed fourth generation or produced fifth generation. Male flight increased at Porterville, averaged 51.8-100.9 males week ending December 3, could indicate second fourth-generation male flight. (CA Coop. Rep.).

GYPSY MOTH (Lymantria dispar) - CALIFORNIA - Survey continued within delimitation zone of San Jose, Santa Clara County. About 88 percent of blocks in delimitation zone surveyed as of November 5. Over 2,600 properties inspected for egg masses. Number of infested properties still 7. Samples taken from about 451 egg masses during removal of backyard fence at San Jose week ending November 26. Inspection revealed 59 percent hatched without evidence of dermestid activity, 21 percent hatched with evidence of dermestid activity (possibly hatched before 1976), 9 percent

unhatched with almost completely developed larvae (possibly viable eggs), and 11 percent unhatched and in most cases, dry (possibly destroyed by chemical treatments). One live, recently hatched larva taken from one egg mass. Ten additional larvae hatched from same egg mass and active. First larva feeding on *Pyracantha* in laboratory. (CA Pest Rep.). WISCONSIN - Empty pupal case and 3 cast larval skins found on tree trunk at private residence at edge of wooded area in Appleton, Outagamie County. Collected by J. Eibling, November 9, 1976. Determined by D.M. Weisman. This is a new State record for an active infestation. (PPQ).

ORIENTAL FRUIT FLY (*Dacus dorsalis*) - CALIFORNIA - Trapping area increased by 350 square miles in Los Angeles County week ending November 19. Total of 1,117 Steiner traps in field and 148 McPhail traps in Inglewood area. All traps in county operating weekly. Additional McPhail traps placed in Inglewood area week ending November 26. Second fly trapped in La Crescenta area week ending November 19. Two treatments completed in 20 square miles at Inglewood. At least one treatment applied in remaining areas with first beginning at La Crescenta. Total of 33 finds in Los Angeles County to date. One adult male trapped just north of north-east corner of Inglewood week ending December 3 increased delimitation area by about 3-5 square miles to 361 square miles. Steiner traps placed in additional area this date. McPhail traps will be installed at 5 per square mile in 9-square-mile area surrounding this new find. McPhail traps in place (5 per square mile) in treatment area of Inglewood and Pico Rivera and being installed in La Crescenta. One male trapped in Santa Monica, Los Angeles County, on November 26. This find is northern extension by 3 miles from previous find. (CA Coop. Rep.).

JAPANESE BEETLE (*Popillia japonica*) - INDIANA - Adults collected in bait traps by county (and city): Decatur (Osgood), July 15, 1976; Union (Liberty), July 21; and Scott (Scottsburg), July 27. Collected by J. Kingdon. Determined by J. Clark. These are new county records. (Favinger).

RED IMPORTED FIRE ANT (*Solenopsis invicta*) - NORTH CAROLINA - About 450 acres surveyed in 50 soybean fields in southern Columbus County week ending November 24. Infestation averaged 10 identifiable mounds per acre, ranging 1-35 mounds per acre. (Hunt). TEXAS - Heavy in some rangeland areas near Granger and Taylor, Williamson County, week ending December 3. Reported throughout south-central area. (Glodd, Cole).

SCREWWORM (*Cochliomyia hominivorax*) - Total of 4,041 cases reported from continental U.S. October 10 to November 13 (except for October 17-23) as follows: Oklahoma 5, Texas 3,966, New Mexico 7, Arizona 58, California 5. Total of 1,531 cases confirmed in portion of Barrier Zone in Republic of Mexico. Total of 2,659 cases reported in Mexico south of Barrier Zone. Number of sterile flies released this period totaled 682,968,500 as follows: Texas 576,759,500; New Mexico 13,203,000; Arizona 92,466,000; California 540,000. Total of 70,335,900 sterile flies released within Barrier of Mexico. (Vet. Serv.).

WOOLLY WHITEFLY (Aleurothrixus floccosus) - CALIFORNIA - Nymphs infested several kinds of citrus including lemon and grapefruit throughout Orange County week ending November 19. Adults heavy on citrus at Carlsbad, San Diego County, week ending December 3. (CA Pest Rep.).

DISEASES

DUTCH ELM DISEASE (Ceratocystis ulmi) - CALIFORNIA - Final effort made to collect and dispose of remaining broodwood in Napa and Sonoma Counties week of November 26. Tree and sucker growth removed at Calistoga, Napa County. Remaining stumps to be removed soon. (CA Pest Rep.).

HAWAII PEST REPORT

New Records - One adult of an ICHNEUMONID WASP (*Gotra* sp.) collected at Manoa, Oahu, by J.W. Beardsley, October 1, 1975. Since then 11 more specimens collected from same locality. *Gotra* is a large Indo-Papuan genus. Recorded hosts of *Gotra* spp. include various Macro and Microlepidoptera and pompilid wasps. Determined by R.W. Carlson. (Beardsley). This is a new United States record.

Two sexual female specimens of an ANT (*Pseudomyrmex gracilis mexicanus*) collected at large in residential area at Kailua, Oahu, by J.W. Beardsley, September 15, 1976. Determined by D.R. Smith. This is a new State record. No information on its habits available. (Beardsley).

General Vegetables - LEAFMINER FLIES (*Liriomyza* spp.) moderate to heavy in 4 acres of tomatoes in field and greenhouse conditions at Kainaliu and Holualoa, Hawaii Island, and at Omaopio, Maui, week ending November 19. (Matayoshi et al.). WESTERN FLOWER THRIPS (*Frankliniella occidentalis*) heavy, 5-12 per plant on all plants in 0.5-acre planting of lettuce at Hawaii Kai, Oahu, week ending December 10. Paratriphlepslaeviusculus (an anthocorid bug) trace in this planting. GREEN PEACH APHID (*Myzus persicae*) heavy in 0.5-acre planting of daikon at Hawaii Kai, 3-5 per leaf on about 80 percent of leaves. Few mummified individuals. Few adults of *Coccinella septempunctata bruckii* and *Coelophora inaequalis novemmaculata* (lady beetles) in planting. (L. Nakahara).

Fruits and Nuts - BANANA SKIPPER (*Erionota thrax*) counts and damage light at Kona, Hawaii Island, and at Hanapepe, Kaumakani, and New Mill, Kauai, during October surveys of both islands. Of 28 larvae collected from Kauai, 50 percent parasitized by *Apanteles erionotae* (a braconid wasp). larval parasite appeared well established at Kona. (Matayoshi et al.). REDBANDED THRIPS (*Selenothrips rubrocinctus*) light to heavy on 100+ mango trees at Lahaina, Maui, week ending November 19. Damage generally light. Less than 5 percent heavily damaged (20 percent defoliation). (Miyahira). COCONUT SCALE (*Aspidiotus destructor*) light to heavy on 30+ coconut trees at Kalihi, Oahu, week ending November 26. Damage moderate. Damage light to moderate on 100+ coconut trees at Pearl City and Waikiki, Oahu. Moderate predation (5-10 larvae and adults per leaf; 20 percent of infested leaves) by *Lindorus lophanthae* (a lady beetle) at Pearl City. (L. Nakahara).

PAPAW MOSAIC VIRUS discovered in State on Oahu in 1959. This destructive disease spread to commercial orchards on Oahu and to islands of Maui and Hawaii. In 1974, containment program began on Oahu and Hawaii and eradication program on Maui by roguing diseased trees. Surveillance conducted on Kauai, Molokai, and Lanai where disease is not known to occur. During October 1976, monthly surveys on Kauai and Maui and quarterly surveys on Lanai and Molokai had been negative for 10+ months. On Hawaii, 102 diseased trees detected and destroyed during month near commercial regions. On Oahu diseased trees in commercial plantings were identified and destroyed. (Entomol. Branch, State Dep. Agric.).

Forest and Shade Trees - An ADELGID (Pineus pini) light to heavy on 25+ Pinus sp. trees at Waimea, Hawaii Island, week ending November 19. Several trees showed much dieback due to large aphid colonies. (L. Nakahara).

Man and Animals - Another nest of a VESPID WASP (Vespula vulgaris) destroyed in early November in forest area at Hosmer's Grove in Haleakala National Park, Maui, week ending December 10. Found about 0.25 mile away from nest discovered in September. (Miyahira).

Beneficial Insects - One CHAMAEMYIID FLY (Leucopis nigriluna) adult recovered from Pinus sp. infested with Pineus pini (an adelgid) collected by W. Shishido from Kamuela Airport (2,600 foot elevation), Hawaii Island, October 25, 1976. Determined by S. Higa. More adults collected since October 25. First recovery of this predator introduced to control P. pini since release at Waimea, Hawaii, between March 1972 and April 1973. (Higa, Shishido).

Miscellaneous - Delineation surveys and preliminary eradication procedures for BROWN GARDEN SNAIL (Helix aspersa) conducted at Waimea, Hawaii Island, week ending November 19. About 2,000 snails recovered from 15 locations in 9.5 acres out of 29.6 acres surveyed. About 96 percent of recoveries from 2 adjacent locations where 2 egg clusters found (one cluster contained 104 eggs). About 26 percent of the snails were 21 mm in diameter or larger while 74 percent were smaller. Surveillance and eradication continues. Snails recovered from and around lily plants, jade (Crassula), Aloe, Impatiens, tomato, popolo (Solanum), birdsnest-fern (Asplenium), Epidendrum, ti (Cordyline), oleander (Nerium), Canna, and castorbean (Ricinus). No extensive feeding damage on any specific plant. About 3,300 snails of all sizes collected from infested area week ending November 26. Initial baiting in 15-acre treatment area completed and other "high-risk" areas (20+ acres) baited for survey purposes. Eradication measures continued at Waimea week ending December 10. No further infestations outside of delineated treatment area. Snails still recovered from treatment area. (Entomol. Branch, State Dep. Agric.).

DETECTION

NEW UNITED STATES RECORDS

INSECTS

AN ENCYRTID WASP (Ooencyrtus chrysopae) - FLORIDA - Broward County. (p. 866).

AN ICHNEUMONID WASP (Gotra sp.) - HAWAII - Oahu Island. (p. 869).

NEW STATE RECORDS

INSECTS

AN ANT (Pseudomyrmex gracilis mexicanus) - HAWAII - Oahu Island. (p. 869)

A FALSE SPIDER MITE (Dolichotetranychus carnea) - OKLAHOMA - Harper County. (p. 862).

GYPSY MOTH (Lymantria dispar) - WISCONSIN - Outagamie County. (p. 867).

A LEAFHOPPER (Scaphoideus opalinus) - INDIANA - Marion County. (p. 863).

A SCOLYTID BEETLE (Leperisinus californicus) - KANSAS - Stevens County. (p. 864).

A WEEVIL (Scyphophorus acupunctatus) - NEVADA - Clark County. (p. 864).

WEEDS

HYDRILLA (Hydrilla verticillata) - CALIFORNIA - Yuba County. (p. 866).

NEW COUNTY RECORDS

INSECTS

BEET ARMYWORM (Spodoptera exigua) - OHIO - Jefferson (p. 864).

A CICADA (Okanagana rimosa) - WISCONSIN - Menominee (p. 865).

FACE FLY (Musca autumnalis) - ALABAMA - Cullman, Blount, St. Clair, Talladega, Clay, Randolph, Chambers (p. 865).

FORBES SCALE (Quadraspidotus forbesi) - ALABAMA - Barbour (p. 865).

GRAPE ROOT BORER (Vitacea polistiformis) - ALABAMA - Cullman (p. 863).

GRAPE SCALE (Diaspidiotus uvae) - ALABAMA - Montgomery (p. 865).

JAPANESE BEETLE (Popillia japonica) - INDIANA - Decatur, Union, Scott (p. 867).

A PUNCTUREVINE STEM WEEVIL (Microlarinus lypriformis) - OKLAHOMA - Blaine (p. 866).

A NOCTUID MOTH (Mouralia tinctoides) - CALIFORNIA - Santa Clara (p. 864).

A SCOLYTID BEETLE (Xylosandrus compactus) - ALABAMA - Baldwin, Escambia, Conecuh (p. 864).

A SIRICID WASP (Eriotremex formosanus) - FLORIDA - Columbia (p. 865).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - NORTH DAKOTA - Bottineau (p. 864).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - INDIANA - Jackson (p. 861); Marion (p. 863).

CORRECTIONS

CPPR 1(44-47):834 - WESTERN CORN ROOTWORM - NORTH DAKOTA - "Burleigh ... August 24. Collected and determined by W.J. Brandvik" should read for "Burleigh ... August 26, 1967. Collected and determined by R.D. Frye." (Scholl).

CPPR 1(44-47):834 - SOUTHERN CORN ROOTWORM - NORTH DAKOTA - " ... Williams ... August 31. Collected and determined by W.J. Brandvik. Pembina ... September 8; ... Grand Forks ... August 31, 1976. Collected and determined by C.G. Scholl." should read for " ... Williams ... June 4, 1967, by M.W. Kotchman ... Pembina ... August 29, 1962, by D. Aarhus. Determined by R.L. Post ... Grand Forks ... August 28, 1958. Collected and determined by R.L. Post." (Scholl).

CPPR 1(44-47):836 - SOUTHERN CORN ROOTWORM - NORTH DAKOTA - " ... Cavalier ... September 9, 1976. Collected and determined by C.G. Scholl" should read for " ... Cavalier ... August 30, 1959. Collected and determined by R.L. Post." (Scholl).

CPPR 1(44-47):843 - CORRECTIONS - "CPPR 1(41):744 ..." should read "CPPR 1(41):774 ..."

CPPR 1(44-47):844 - HAWAII PEST REPORT - BROWN GARDEN SNAIL - "reported by S. Furutani ... on October 21 ... Determined by S. Higa ..." should read "reported by M. Nobriga ... on October 20, 1976 ... Determined by J.W. Beardsley." (Matayoshi et al.).

Estimates of Damage by the European Corn Borer
to Grain Corn in the United States in 1975

Compiled by the New Pest Detection and Survey Staff
PPQ, APHIS

The loss to grain corn attributed to the European corn borer (*Ostrinia nubilalis* (Hübner)) in 1975 is estimated to be about 223,221,000 bushels in 14 corn-producing States. In these States the loss was 4.49 percent of production. This loss is about 3.87 percent of the total national crop estimated at 5,766,991,000 bushels 1/. The value of the loss, based on the season average prices received by farmers for corn 2/, is \$549,685,000. These loss estimates are only for the States shown in Table 1, and are based on the counties or districts surveyed during the fall of 1975 within the States 3/.

Table 1 is a composite of State and Federal estimates. These estimates were prepared by using production data 1/, and prices received 2/, released by the Statistical Reporting Service. The basis for the loss estimates was determined by the survey of European corn borer populations during the fall of 1975 3/. The index of 3 percent loss per borer per plant was used to compute the loss in bushels.

Estimated losses to grain corn for the past 24 years in States where the fall abundance survey was conducted are as follows:

1975	223,221,000 Bushels	\$549,685,000
1974	42,599,000 "	148,865,000
1973	139,395,000 "	329,272,000
1972	65,821,000 "	83,367,000
1971	305,545,000 "	319,777,000
1970	195,885,000 "	250,178,000
1969	163,501,000 "	182,509,000
1968	154,554,000 "	161,287,000
1967	59,661,000 "	63,837,000
1966	121,236,000 "	155,876,000
1965	54,318,100 "	59,374,160
1964	87,116,000 "	97,478,000
1963	120,647,000 "	127,838,000
1962	88,245,000 "	93,695,000
1961	65,044,000 "	68,998,000
1960	102,991,000 "	96,085,000
1959	67,763,000 "	71,979,000
1958	100,699,000 "	98,434,000
1957	180,897,000 "	158,841,000
1956	97,971,000 "	119,535,000
1955	155,355,000 "	182,579,000
1954	191,614,000 "	261,415,000
1953	90,000,000 "	125,466,000
1952	53,270,000 "	77,205,000

1/ Crop Production, 1975 Annual Summary, Crop Reporting Board, Statistical Reporting Service, USDA, January 15, 1976.

2/ Crop Values, Season Average Prices Received by Farmers and Value of Production 1973, 1974, and 1975. Crop Reporting Board, Statistical Reporting Service, USDA, January 29, 1976.

3/ Cooperative Plant Pest Report 1(27):397-404, 1976.

Table 1.

Estimates of Damage by the European Corn Borer to
Corn Grown for Grain in the United States in 1975

State	Districts Included 1/	Estimated Data				
		Total	Value	Value	Loss of Crop	
		State	Per	of		
		Production	Bushel	Production		
	Number	1,000 Bu.	Dollars	\$1,000	1,000 Bu.	\$1,000
Delaware	1	17,290	2.60	44,954	2,170	5,642
Illinois	9	1,242,360	2.50	3,105,900	27,461	68,653
Indiana	12	551,740	2.45	1,351,763	5,482	13,430
Iowa	12	1,091,700	2.40	2,620,080	54,367	130,480
Kansas	9	137,760	2.55	351,288	2,035	5,189
Kentucky	5	87,780	2.55	223,839	4,386	11,185
Michigan	5	152,800	2.35	359,080	20,793	48,864
Minnesota	7	407,400	2.45	998,130	5,067	12,415
Missouri	8	170,100	2.55	433,755	8,446	21,537
Nebraska	5	503,200	2.50	1,258,000	85,563	213,908
North Dakota	1	6,732	2.50	16,830	62	156
Ohio	5	321,080	2.45	786,646	3,656	8,956
South Dakota	5	83,250	2.45	203,963	2,492	6,106
Wisconsin	9	198,370	2.55	505,844	1,241	3,164
Totals		4,971,562		12,260,072	223,221	549,685

1/ Cooperative Plant Pest Report 1(27):379-406, 1976.

Prepared by New Pest Detection
and Survey Staff

U.S. Dep. Agric.
Coop. Plant Pest Rep.
1(48-52):873-874, 1976

COOPERATIVE PLANT PEST REPORT
ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO
INSECTS AND RELATED ARTHROPODS - 1975

Introduction

Prior to 1966, insect loss estimates were published in the Cooperative Economic Insect Report as individual reports. An attempt has been made for the eleventh year to condense loss estimates from various States into a single report. This gives a more meaningful and better overall picture of the crop losses. The data has been compiled from the crop loss estimates submitted from 12 States. The entomologists submitting the 1975 estimates are listed below.

H. F. McQueen	Alabama
W. P. Boyer	Arkansas
L. M. Nakahara	Hawaii
D. Sreenivasam	Minnesota
W. A. Iselin	New Mexico
H. R. Willson	New York
C. G. Scholl	North Dakota
D. C. Arnold	Oklahoma
D. D. Walgenbach	South Dakota
J. A. Jackman	Texas
W. A. Allen	Virginia
O. L. Lovett	Wisconsin

Legend for pest abbreviations and footnotes appear at end of loss tables.

Separates of this report are available from the New Pest Detection and Survey Staff.

U.S. Dep. Agric.
Coop. Plant Pest Rep.
1(48-52):875-893, 1976

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
			Loss Per Acre (Units)	Loss Per Acre (Dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (Dollars)	Treated Acres (1000)		Sub-total (\$1000)
			(Bushels)							
CORN (grain)										
ALABAMA	CB, CEw, CLA, ECB, FA, MB, SCsB, SCSB, SwCB	660.00	5.30	14.58	370.00	5,394.60	2.00	30.00	60.00	5,454.60
ILLINOIS		10,710.00								
	Aw		4.15	11.33	10.00	113.30	4.50	28.00	126.00	239.30
	CFB		4.15	11.33	40.00	453.20	4.00	88.00	352.00	805.20
	CLA		8.30	22.66	25.00	566.50	5.05	51.00	257.55	824.05
	CR (adults)		6.00	16.38	25.00	409.50	4.55	351.00	1,930.00	2,340.00
	CR (larvae)		14.00	38.22	30.00	1,146.60	4.55	4,587.00	20,870.85	22,017.45
	Cws		10.00	27.30	100.00	2,730.00	6.05	173.00	1,046.65	3,776.65
	ECB		4.15	11.33	50.00	566.50	5.19	159.00	825.21	1,394.71
	FA		4.15	11.33	10.00	113.30	4.50	36.00	162.00	275.30
	Gh		3.32	9.06	7.00	63.42	4.50	14.00	63.00	126.42
	WG, Ww		8.00	21.84	20.00	436.80	5.50	916.00	5,038.00	5,474.80
MINNESOTA		5,820.00								
	Aw		-	-	-	7.89	-	-	2.16	10.05
	CLA		-	-	-	0.88	-	-	0.24	1.12
	CR		-	-	-	9,671.76	-	-	7,197.20	16,868.96
	Cws		-	-	-	101.81	-	-	75.76	177.57
	ECB		-	-	-	78.93	-	-	21.60	100.53
	WG		-	-	-	203.62	-	-	151.52	355.14
	Ww		-	-	-	203.62	-	-	151.52	355.14
NORTH DAKOTA	CLA, CR, Gh, WG, Ww	132.00	3.06	7.65	18.00	137.70	4.00	22.00	88.00	225.70
SOUTH DAKOTA	CR	2,250.00	12.95	31.73	315.00	9,994.95	5.00	1,260.00	6,300.00	16,294.95
	ECB, Cws, Gh, Ww	"	4.44	10.88	78.75	856.80	4.00	78.75	315.00	1,171.80
TEXAS	CEw, SCR, SwCB, SpM	1,100.00	5.15	13.65	-	-	5.50a/	693.25	6,865.16	6,865.16

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss		Control Cost			Total Loss (\$1000)
			Loss Per Acre (Units)	Loss Per Acre (Dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (Dollars)	
CORN (cont.)								
VIRGINIA	Aw, Cws, ECB	565.00	17.11	45.34	79.64	3,610.88	7.00	5,733.63
WISCONSIN	Aw	2,390.00	10.79	27.51	-	734.52b/	6.41	905.67
	CLA	"	1.66	4.23	117.10	495.33	5.00	507.33
	CR (adults)	"	1.66	4.23	6.26	26.48	5.00	48.18
	CR (larvae)	"	3.32	8.47	854.02	12,145.98b/	5.00	18,718.48
	ECB	"	0.55	1.40	143.40	3,360.75c/	5.00	3,360.75
Subtotal					53,625.62		60,800.02	114,425.64
CORN (silage)								
NORTH DAKOTA	CLA, CR, ECB, Gh, Ww	294.00	0.32	5.76	57.00	328.32	4.00	417.66d/
VIRGINIA	Aw, Cws, ECB	173.00	2.99	65.78	24.39	1,604.37	7.00	2,254.36
WISCONSIN	Aw	1,000.00	1.05	16.28	2.00	547.01b/	6.23	743.88
	CR	"	0.42	6.51	50.00	3,906.00	5.00	6,656.00
	ECB	"	0.07	1.09	60.00	1,081.28c/	5.00	1,081.28
Subtotal					7,466.98		3,650.86	11,153.18
CORN (sweet)								
ALABAMA	BSB, CEW, CLA, FA, SCR, SGB, Ww	3.50	-	-	-	-	40.00	140.00
MINNESOTA	CEW	120.00	-	-	-	-	-	106.80
	CR	"	-	-	-	-	-	160.20
	ECB	"	-	-	-	-	-	801.00
WISCONSIN	CR	142.00	-	-	-	-	5.00	355.00
	ECB	"	-	-	-	-	15.00	1,278.00
Subtotal					-	-	2,841.00	2,841.00
SORGHUM (grain)								
ARKANSAS	SM, SWw	200.00	9.80	21.36	2.00	42.72	3.50	91.72
ILLINOIS	FA, Wbw, et al.	60.00	3.20	7.87	5.00	39.35	4.00	55.35
NEW MEXICO	Gb, FCB, SM, StB	310.00	7.50	22.50	937.50	2,812.50	6.00	4,081.25d/

Insects Affecting State	pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
			Loss per Acre (Units)	Loss per Acre (Dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost per Acre (Dollars)	Treated Acres (1000)		Sub-total (\$1000)
SORGHUM (cont.)										
			(Bushels)							
OKLAHOMA	CEW, FA, Gb, SM	660.00	11.02	26.23	164.74	4,321.13	4.00	92.66	370.64	4,691.77
SOUTH DAKOTA	CLA, Gb	237.00	6.50	14.95	2.37	35.43	4.00	9.48	37.92	73.35
TEXAS	CEW, FA, Gb, SM, SpM, Ww	7,200.00	2.60	6.19	335.88	2,079.10	4.50a	3,664.13	27,544.16	29,623.26
Subtotal					9,330.23			29,067.72		38,616.70
SMALL GRAINS										
MINNESOTA	Aw	5,783.00	-	-	-	-	-	-	1,222.40	1,222.40
	Cws	"	-	-	-	-	-	-	76.40	76.40
	Gh	"	-	-	-	-	-	-	152.80	152.80
	PA	"	-	-	-	-	-	-	45.84	45.84
	Ww	"	-	-	-	-	-	-	30.56	30.56
TEXAS (barley, oats, wheat, & rye)	FA, Gb, SpM, WG	6,460.00	2.38	7.50	1,245.38	9,340.35	4.50a	1,754.63	11,302.32	20,642.67
Subtotal					9,340.35			12,830.32		22,170.67
BARLEY										
NORTH DAKOTA	A, Aw, BT, Gh, Ww	1,990.00	3.42	9.23	24.00	221.52	4.50	96.00	432.00	653.52
Subtotal					221.52			432.00		653.52
OATS										
ARKANSAS	Aw	100.00	-	-	-	-	3.50	25.00	87.50	87.50
NORTH DAKOTA	Aw, Gh, Ww	1,370.00	3.69	4.98	20.55	102.34	3.75	13.70	51.38	153.72
WISCONSIN	Aw	1,350.00	20.46	27.62	50.40	5,217.42b	6.21	138.50	860.09	6,077.51
Subtotal					5,319.76			998.97		6,318.73

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)
			Loss per Acre (Units)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost per Acre (Dollars)	Treated Acres (1000)	Sub-total (\$1000)	
RICE			(Cwt.)						
ARKANSAS	RWW, Gh	880.00	-	-	-	4.50	52.80	237.60	237.60
TEXAS	FA, Gh, RWW, SED, et al.	548.00	0.45	4.10	6.75	3.42a	433.25	2,980.67	3,008.35
	Subtotal				27.68			3,218.27	3,245.95
RYE			(Bushels)						
NORTH DAKOTA	AL, Gh	119.00	2.00	4.50	5.80	3.75	1.20	4.50	30.60
	Subtotal				26.10			4.50	30.60
WHEAT (all)									
ARKANSAS	Aw	520.00	-	-	-	3.50	125.00	437.50	437.50
ILLINOIS	Aw	1,730.00	1.80	10.00	60.70	4.50	70.00	315.00	375.70
NEW MEXICO	FCB, Gb, Gh	387.00	1.25	60.00	270.00	4.50	285.00	1,282.50	1,570.50d/9
NORTH DAKOTA	A, Aw, Cws, Gh, WSM, Ww	10,213.00	1.55	510.00	3,345.60	5.00	510.00	2,550.00	5,895.60
OKLAHOMA	ACw, Aw, Gb	6,700.00	5.76	19.01	1,344.02	3.59	933.98	3,352.99	28,902.81
	Subtotal				29,226.12			7,937.99	37,182.11
WHEAT (HRS)									
NORTH DAKOTA	WSM	6,130.00	0.51	1.99	1,429.00	-	104.00	-	2,843.71
	Subtotal				2,843.71			-	2,843.71
WHEAT (spring & durum)									
SOUTH DAKOTA	Gh, HF, WSM	2,233.00	1.80	7.47	111.65	-	-	-	834.03
	Subtotal				834.03				834.03

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost		Sub-total (\$1000)	Total Loss (\$1000)	
			Loss per Acre (Units)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (Dollars)	Treated Acres (1000)			
WHEAT (winter)			(Bushels)							
SOUTH DAKOTA	ACw, Gh, GsB	770.00	6.00	21.00	15.40	323.40	4.00	61.60	246.40	569.80
	Subtotal					323.40			246.40	569.80
RANGE			(Tons)							
SOUTH DAKOTA	Gh SW	26,000.00	0.32	14.40	55.00	792.00	-	-	-	792.00
		"	0.35	15.75	25.00	393.75	-	-	-	393.75
	Subtotal					1,185.75				1,185.75
ALFALFA (hay)										
ARKANSAS	AlW	63.00	0.41	16.20	8.00	129.60	4.00	42.00	168.00	297.60
ILLINOIS	AlW	740.00	0.93	46.50	50.00	2,325.00	4.54	347.00	1,575.38	3,900.38
	Pol	"	0.31	15.50	10.00	155.00	4.50	25.00	112.50	267.50
	AlW, PA, VC	"	0.13	6.50	2.00	13.00	3.30	9.00	29.70	42.70
NEW MEXICO	AC, AlW, PA, SAA	201.00	0.86	51.60	20.00	1,032.00	6.00	175.00	1,050.00	2,084.00d
NORTH DAKOTA	AlW, Gh, PA, PB	1,650.00	0.15	6.00	103.00	618.00	3.50	62.00	217.00	835.00
OKLAHOMA	AlW, PA, SAA, VC	515.00	0.95	53.36	132.51	7,070.73	6.05	294.94	1,784.39	8,855.12
SOUTH DAKOTA	AlW, Gh	2,560.00	0.30	14.85	153.60	2,280.96	3.50	230.40	806.40	3,087.36
VIRGINIA	AlW, PA, Slb	80.00	1.16	63.80	9.96	635.45	7.00	56.44	395.08	1,279.53d
WISCONSIN	AlW PA, PB, Pol	3,020.00	0.14	6.97	15.10	105.25	5.00	15.10	75.50	180.75
		"	0.06	2.93	410.00	1,201.30	6.00	40.00	240.00	2,437.60
	Subtotal					15,566.29			6,453.95	23,267.54
SOYBEANS			(Bushels)							
ALABAMA	BLE, BSB, CRW, CL, GrCw, LCB, MBE, SGSB, SL, TB, VbC, WfB	1,310.00	2.40	11.16	130.00	1,450.80	9.00	370.00	3,330.00	4,780.80
ARKANSAS	Blw	4,750.00	-	-	-	-	4.00	28.00	112.00	112.00

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
			Loss Per Acre (Units)	Loss Per Acre (Dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (Dollars)	Treated Acres (1000)		Sub-total (\$1000)
SOYBEANS (cont.)										
ILLINOIS	Gh	8,220.00	1.72	9.17	10.00	91.70	4.50	72.00	324.00	415.70
	GrCw	"	1.23	6.56	5.00	32.80	4.50	87.00	31.50	424.30
	M	"	10.00	53.30	3.00	159.90	5.10	10.00	51.00	210.90
	T	"	1.00	5.33	-	-	4.60	132.00	607.20	607.20
MINNESOTA	BLB	3,570.00	-	-	-	-	-	-	34.80	34.80
	Gh	"	-	-	-	-	-	-	46.40	46.40
	GrCw	"	-	-	-	-	-	-	34.80	34.80
NORTH DAKOTA	Gh, GrCw	149.00	1.17	5.27	16.50	86.96	3.75	16.50	61.88	148.84
VIRGINIA	CEW, MBB, StB	433.00	2.50	11.25	2.60	29.25	5.50	32.00	176.00	224.75
Subtotal						1,851.41			5,169.58	7,040.49
PEANUTS										
ALABAMA			(Pounds)							
ALABAMA	Aw, BA, BrB, FA, GCw, L, LCB, RPW, SCR, SpM, T, WfB	206.00	780.00	152.88	42.00	6,420.96	9.50	164.00	1,558.00	7,978.96
	CEW, LCB, RPW	115.00	424.20	81.45	21.74	1,770.72	8.95	26.57	237.80	2,008.52
TEXAS	BA, BrB, CEW, FA, LCB, SPM, Ysaw	304.00	457.50	85.10	60.00	25,868.88	5.50	173.19	1,649.19	33,122.99
VIRGINIA	Pol, SCR, SpM	102.00	275.00	54.18	1.00	54.18	15.47	99.00	1,531.53	1,605.71
Subtotal						34,114.74			4,976.52	44,716.18
COTTON										
ALABAMA (Upland)										
ALABAMA (Upland)	A, Blw, BW, BwWf, SpM, T, TB, TPB	440.00	-	-	-	-	45.00	440.00	19,800.00	19,800.00
ARKANSAS (Upland)	Blw, BW, M, PB, TB	780.00	125.00	63.13	-	7,385.63	20.00	624.00	12,480.00	20,089.63
NEW MEXICO (all)	BW, M, PB, PBW, T	97.50	28.90	15.90	-	-	5.75	40.00	230.00	230.00
OKLAHOMA (Upland)	Blw, BW, Ctf, TB	295.00	88.64	43.79	111.95	4,902.29	10.12	91.60	926.99	5,829.28
TEXAS (all)	Blw, BW, Ctf, PBW, T, TB	3,923.50	-	-	2,081.58	88,244.10	-	1,053.42	38,000.00	132,037.71
Subtotal						100,532.02			71,436.99	177,986.62

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss		Control Cost			Total Loss (\$1000)		
			Loss per Acre (Units)	Loss per Acre (Dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (Dollars)		Treated Acres (1000)	Sub-total (\$1000)
SUNFLOWERS (cont.)										
NORTH DAKOTA	Cws, Gh, SfB, SfM, SfMg, SuM, W, WG, Ww	498.00	0.51	5.50	99.00	544.50	5.00	199.00	995.00	1,539.50
SOUTH DAKOTA	Cws, Gh, SfM	178.00	2.03	21.36	19.50	416.52	4.00	25.00	100.00	516.52
TEXAS	CaB, SHm, SuM	265.00	1.06	10.57	-	-	-	-	-	-
Subtotal						961.02		1,239.00		2,200.02
EGGPLANTS										
HAWAII	A, BM, CSPM, Ghwf	.045	27.00	737.10	-	33.17b	244.27	.045	10.99	44.16
Subtotal						33.17			10.99	44.16
POTATOES										
ALABAMA	A, CPB, ECB, PFB, PoL, WfB, Ww	19.60	-	-	-	-	12.00	19.60	235.20	235.20
MINNESOTA	A	65.10	-	-	-	3.14	-	-	65.10	68.24
	CPB	"	-	-	-	1.57	-	-	32.55	34.12
	Cws	"	-	-	-	6.27	-	-	130.20	136.47
	FB	"	-	-	-	4.70	-	-	97.65	102.35
	PoL	"	-	-	-	14.11	-	-	292.95	307.06
NEW YORK	CPB, FB, GPA, PoA, PoL	47.30	-	-	-	1.57	-	-	32.55	34.12
NORTH DAKOTA	A, CPB, Cws, FB, L, Ww	110.00	4.80	20.64	10.00	206.40	63.50	47.30	3,003.55	3,003.55
WISCONSIN	PoL	49.50	150.00	885.00	1.24	1,097.40	4.50	55.00	247.50	453.90
Subtotal						1,335.16		48.26	1,783.69	2,881.09
								5,920.94		7,256.10

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss		Control Cost			Total Loss (\$1000)
			Loss Per Acre (Units)	Non-treated Acres (1000) (Dollars)	Sub-total (1000) (\$1000)	Cost Per Acre (Dollars)	Treated Acres (1000)	
(Cwt.)								
TOMATOES								
ALABAMA	A, CL, FB, L, LmF, SpM, TFW, WfB	8.00	-	-	-	60.00	8.00	480.00
ARKANSAS	TFW	3.30	-	-	-	54.00	2.80	151.20
HAWAII	Gh, Wf, LmF, TFW, TPW	0.23	35.48	979.22	-	225.22b	0.23	91.26
Subtotal					225.22		722.46	947.58
(Tons)								
SNAP BEANS								
ALABAMA	BLE, CEW, LCB, MBB, SCR, SpM, T	1.38	-	-	-	20.00	1.38	27.60
WISCONSIN	ScM	64.80	0.06	7.15	14.80	463.32b	50.00	32.50
	ECB, PoL	"	-	-	-	15.00	64.80	972.00
Subtotal					463.32		1,032.10	1,495.42
(Pounds)								
BEANS (dry edible)								
NORTH DAKOTA	Cws, Gh, GrCw	122.00	19.40	3.20	1.50	4.80	1.00	3.75
Subtotal					4.80		3.75	8.55
(Tons)								
PEAS								
WISCONSIN	Aw, VC, et al. PA	133.10	-	-	-	4.00	13.31	53.24
		"	0.06	12.60	8.28	4.20	25.00	234.16d
Subtotal					104.33		158.24	287.40

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
			Loss Per Acre (Units)	Loss Per Acre (Dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (Dollars)	Treated Acres (1000)		Sub-total (\$1000)
(Pounds)										
COLE CROPS:										
CABBAGE										
WISCONSIN (fresh and processed)	CL, IC, et al.	5.50	trace	trace	trace	trace	39.20	5.50	215.60	215.60
Subtotal									215.60	215.60
CHINESE CABBAGE										
HAWAII	A, CL, Cws, DM	0.25	3,758.40	357.05	-	89.26b	184.68	0.25	46.17	135.43
Subtotal						89.26			46.17	135.43
MUSTARD CABBAGE										
HAWAII	A, CL, CW, DM	.084	1,741.60	348.32	-	29.26b	80.62	.084	6.77	36.03
Subtotal						29.26			6.77	36.03
(Tons)										
CUCURBITS:										
CUCUMBERS										
WISCONSIN	ScM	10.20	0.21	25.99	10.20	265.10	0.65	-	-	265.10
Subtotal						265.10			-	265.10
(Cwt.)										
GENERAL VEGETABLES										
CARROTS (fresh and processed)										
WISCONSIN	AL	3.40	42.90	146.29	-	497.39b	42.00	3.40	142.80	640.19
Subtotal						497.39			142.80	640.19

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Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
			Loss Per Acre (Units)	Loss Per Acre (Dollars)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre (Dollars)	Treated Acres (1000)		Sub-total (\$1000)
(Cwt.)										
CELERY										
WISCONSIN	AL	0.30	87.00	579.42	-	173.83b	60.00	0.30	18.00	191.83
	Subtotal					173.83			18.00	191.83
LETTUCE										
HAWAII	Cws, T, Lo	0.49	21.12	369.65	-	181.13b	162.62	0.49	79.68	260.81
NEW YORK	A, L, Lo	3.20	-	-	-	-	61.10	3.20	195.52	195.52
WISCONSIN	AL	0.90	24.00	239.52	-	215.57b	42.00	0.90	37.80	253.37
	Subtotal					396.70			313.00	709.70
ONIONS										
HAWAII (green)	BA, LM, LmF, OT	0.097	15.19	616.55	-	59.81b	229.71	0.097	22.28	82.09
NEW YORK	OM, OT	13.50	-	-	-	-	54.38	13.50	734.13	734.13
WISCONSIN	AL	1.20	11.70	121.68	0.20	146.02b	60.00	1.00	60.00	222.24d
	Subtotal					205.83			816.41	1,038.46
SWEETPOTATOES										
ALABAMA	FB, GCw, Spw, WfB, WG, Ww, YsAw	5.80	-	-	-	-	10.00	5.80	58.00	58.00
	Subtotal								58.00	58.00
DECIDUOUS FRUITS:										
APPLES			(Pounds)							
ARKANSAS	CdM, Lr, M, PC, RAA	1.70	-	-	-	-	70.00	1.70	119.00	161.50d

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Insects Affecting State		Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)	
				Loss Per Acre (Units)	Per Acre Dollars) (1000)	Non-treated Acres (1000)	Sub-total (\$1000)	Cost Per Acre Dollars) (1000)	Treated Acres (1000)		Sub-total (\$1000)
APPLES (cont.)				(Pounds)							
NEW YORK	AM, Cdm, ERM, LAPw, Oblr, OFM, PC, RAA, RblLr, TPB	60.00	93.50	5.42	-	325.20b/-	58.30	60.00	3,498.00	3,823.20	
VIRGINIA	A, Cdm, Lr, M	39.50	-	-	-	-	62.00	39.50	2,449.00	2,449.00	
WISCONSIN	AM, Cdm	7.00	-	-	-	-	80.00	7.00	560.00	560.00	
Subtotal						325.20			6,626.00	6,993.70	
PEACHES ALABAMA				(1000 Trees)			(Per Tree)	(1000 Trees)			
	LPTB, OFM, PC, PTB, SJS, WFS, M	650.00	-	-	-	-	0.40	650.00	260.00	260.00	
ARKANSAS				(1000 Acres)			(Per Acre)	(1000 Acres)			
	OFM, PC, PTB, SB, Sc, TPB	3.50	-	-	-	-	45.00	3.50	157.50	367.50d/-	
Subtotal						-			417.50	627.50	
CHERRIES WISCONSIN				CFF et al.	3.40	-	-	-	70.00	3.40	238.00
Subtotal						-			238.00	238.00	
DECIDUOUS NUTS:				(1000 Trees)			(Per Tree)	(1000 Trees)			
PECANS ALABAMA	BPA, HS, OS, PeP, FeW, PLJC, PLP, PNC, SpM, SUB, YA	925.00	10.50	3.89	775.00	3,014.75	10.00	150.00	1,500.00	8,389.75d/-	

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss		Control Cost		Total Loss (\$1000)
			Loss Per Acre (Units)	Non-treated Acres (1000)	Cost Per Acre (Dollars)	Treated Acres (1000)	
PECANS (cont.)		(1000 Acres)	(Pounds Per Acre)				
TEXAS	BPA, FW, HS, PeW, PNC, StB, WC, YA	381.92	24.69	638.02	9.83	161.98	12,404.07
	Subtotal			9,286.49		7,156.36	20,793.82
OTHER TROP. & SUBTROP. FRUITS:							
MACADAMIA NUTS (in shell)							
HAWAII	A, BM, T	6.08	276.30	3.90	82.89	2.18	342.89
	Subtotal					19.62	342.89
GRAPES			(Tons)				
ARKANSAS	GBM, GS	3.10	-	-	44.00	3.10	136.40
	Subtotal					136.40	136.40
ORNAMENTALS:			(Dozens)				
ANTHURIUMS							
HAWAII	A, M, NK, T	0.24	236.40	-	354.60	0.24	266.90
	Subtotal					182.15	266.90
ORNAMENTALS AND TURF							
ALABAMA	A, ABS, ALE, Bgw, ETB, CB, CS, ELB, FA, GP, LPTB, MW, NPTM, PtB, SB, SJS, SPS, Spm, SW, TS, TSc, Wf, WfB, WPS	(Building Units)					
		1,250.00	-	-	4.00	1,250.00	5,000.00
	Subtotal					5,000.00	5,000.00

Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)
			Loss per Acre (Units)	Per Acre (Dollars)	Non-treated Acres (1000)	Cost per Acre (Dollars)	Treated Acres (1000)	Sub-total (\$1000)	
FOREST			(Board feet)						
ALABAMA	AB, BTB, ETC, FTC, NPTM, RhPS, SPE, SPS	21,700.00	4.15	-	-	-	-	-	5,400.00
	Subtotal								5,400.00
MAN AND ANIMALS:									
CATTLE		(1,000 Animals)	(Cwt. per Animal)	(Per Animal)	(1,000 Animals)	(Per Animal)	(1,000 Animals)		
ARKANSAS (all)	HoF, LST	2,680.00	-	12.00	1,380.00	16,560.00	1.15	1,300.00	18,055.00
	Li	"	-	-	-	-	0.14	1,250.00	175.00
NORTH DAKOTA (all)	CaG, CaL, FF, HoF, Mo, SF	2,380.00	0.25	7.50	500.00	6,000.00	-	-	6,000.00
WISCONSIN (Dairy & beef)	FF, HoF, SF	3,928.70	-	-	-	-	0.50	1,400.00	5,200.00
	Subtotal						0.75	3,928.70	2,946.53
BEEF CATTLE									
ALABAMA (Calves sold)	CCG, FF, HoF, Hf, HrF, Li, Mo, SF	1,250.00	0.66	14.65	410.00	6,006.50	3.50	840.00	10,586.50d/
(Brood & breeding)	Bf, CCG, FF, HoF, Hf, HrF, Li, Mo, SF, Ti								
OKLAHOMA (Calves)	CaL, CCG, FF, HoF, HrF, Ti	2,850.00	1.04	23.09	850.00	19,626.50	4.00	2,000.00	27,626.50
TEXAS	CCG, HoF, Li Mo, Scw *, SF, Ti	2,443.00	0.60	16.74	826.71	13,839.13	1.69	1,469.71	16,322.94
		16,564.00	0.75	26.25	7,198.58	188,962.72	1.25	8,801.42	207,163.08
	Subtotal							24,425.59	261,699.02

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Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Yield Loss			Control Cost			Total Loss (\$1000)
			Loss Per Acre (Units)	Per Acre (Dollars)	Non-treated Acres (1000)	Cost Per Acre (Dollars)	Treated Acres (1000)	Sub-total (\$1000)	
DAIRY CATTLE		(1,000 Animals)	(Cwt. per Animal)	(Per Animal)	(1,000 Animals)	(Per Animal)			
	ALABAMA (Cows & calves)								
ARKANSAS	Bf, CCG, FF, HoF, HrF, Li, Mo, SF, Ti	165.00	11.34	121.34	10.00	3.00	155.00	465.00	1,678.40
	Hf, Hof	90.00	5.22	52.20	30.00	5.00	60.00	300.00	1,866.00
	CaL, CCG, FF, HoF	122.00	9.56	87.00	18.54	3.57	97.36	347.58	1,960.56
	CCG, HoF, Li, Mo, Scw, SF, Ti	335.00	3.00	28.77	-	1.75	370.64	648.62	648.62
Subtotal					4,392.38			1,761.20	6,153.58
HOGS									
ALABAMA	Hf, HL, M	2,024.00	0.22	9.81	524.00	1.75	1,500.00	2,625.00	7,765.44
	Li	-810.00	-	-	-	0.40	2.38	0.95	0.95
	Subtotal				5,140.44			2,625.95	7,766.39
HORSES									
TEXAS	Hf, HrF, Li, Mo, SF, Ti	700.00	-	-	215.39	0.30	309.61	92.88	92.88
	Subtotal				-			92.88	92.88
HUMANS									
WISCONSIN	Mo	4,418.08	-	-	-	0.50	4,197.20	2,098.60	2,098.60
	Subtotal				-			2,098.60	2,098.60
POULTRY									
TEXAS	Ch, Li, Ti	186,094.00	-	-	8,519.75	0.03	9,192.75	275.78	275.78
	Subtotal				-			275.78	275.78

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Insects Affecting State	Pest Complex	Total Acres Produced (1000)	Loss Per Acre (Units)	Yield Loss		Sub-total (\$1000)	Control Cost		Total Loss (\$1000)
				Loss Per Acre (Dollars)	Non-treated Acres (1000)		Cost Per Acre (Dollars)	Treated Acres (1000)	
BROILERS		(1,000 Animals)	(Cwt. per Animal)	(Per Animal)	(1,000 Animals)		(Per Animal)	(1,000 Animals)	
ALABAMA	DB, Hf, Li, M	395,769.00	-	-	-	-	0.03	395,769.00	11,873.07
Subtotal						-		11,873.07	
LAYING HENS									
ALABAMA	DB, Hf, Li, M	12,500.00	-	-	-	-	0.12	12,500.00	1,500.00
ARKANSAS	(includes pullets of laying age)	16,000.00	-	-	-	-	.015	6,000.00	90.00
Subtotal						-		1,590.00	1,590.00
SHEEP AND GOATS									
TEXAS	BotF, Li, Scw, SK, Ti	3,738.00	-	-	1,159.50	-	0.16	1,083.31	497.99
Subtotal						-		173.33	497.99
HOUSEHOLDS AND STRUCTURES									
ALABAMA	An, CF, CiB, Clm, Cnt, Cor, CrB, Df, Hf, M, MM, Mo, Sfs, SGB, SqGB, Ti	1,150.00	-	-	-	-	7.00	1,150.00	8,050.00
	Trm	"	-	-	-	-	-	-	15,000.00
ARKANSAS	Trm	-	-	-	-	-	-	-	2,500.00
Subtotal						-		8,050.00	25,550.00
STORED PRODUCTS									
ALABAMA	AGM, ALM, CiB, Clm, IMM, MFN, RWW, SGB, SqGB	-	-	-	-	-	-	-	2,500.00
Subtotal						-		-	2,500.00

LEGEND
PEST ABBREVIATIONS

A	- Aphids	CtF	- Cotton Fleahopper	MW	- Mimosa Webworm
AB	- Ambrosia Beetle	CW	- Cabbage Webworm	NFM	- Northern Fowl Mite
ABS	- Azalea Bark Scale	Cws	- Cutworms	NK	- Nantucket Katydid
AC	- Alfalfa Caterpillar	DB	- Darkling Beetles	NPTM	- Nantucket Pine Tip Moth
ACw	- Army Cutworm	DF	- Dog Flea	ObLr	- Obliquebanded Leafroller
AGM	- Angoumois Grain Moth	DM	- Diamondback Moth	OFM	- Oriental Fruit Moth
AL	- Aster Leafhopper	ECB	- European Corn Borer	OM	- Onion Maggot
ALB	- Azalea Lace Bug	ELB	- Elm Leaf Beetle	OS	- Obscure Scale
ALM	- Almond Moth	ERM	- European Red Mite	OT	- Onion Thrips
ALW	- Alfalfa Weevil	ETC	- Eastern Tent Caterpillar	PA	- Plant Bugs
AM	- Alfalfa Webworm	FA	- Fall Armyworm	PB	- Pink Bollworm
AM	- Apple Maggot	FB	- Flea Beetles	PBW	- Plum Curculio
An	- Ants	FCB	- False Chinch Bug	PC	- Pecan Phylloxera
Aw	- Armyworm	FF	- Face Fly	PeW	- Pecan Weevil
BA	- Beet Armyworm	FTC	- Forest Tent Caterpillar	PFB	- Potato Flea Beetle
Bf	- Black Flies	FW	- Fall Webworm	PLC	- Pecan Leaf Casebearer
Bgw	- Bagworm	GBM	- Grape Berry Moth	PLP	- Pecan Leaf Phylloxera
BLB	- Bean Leaf Beetle	Gb	- Greenbug	PNC	- Pecan Nut Casebearer
Blw	- Bollworm	GCw	- Granulate Cutworm	POA	- Potato Aphid
BM	- Broad Mite	Gh	- Grasshoppers	Pol	- Potato Leafhopper
BotF	- Bot Flies	GhWf	- Greenhouse Whitefly	PTB	- Peach Tree Borer
BPA	- Black Pecan Aphid	GP	- Ground Pearl	RAA	- Rosy Apple Aphid
BrB	- Burrowing Bugs	GPA	- Green Peach Aphid	RbLr	- Redbanded Leafroller
BT	- Barley Thrips	GrCw	- Green Cloverworm	RhPS	- Redheaded Pine Sawfly
ETB	- Black Turpentine Beetle	GS	- Grape Scale	RM	- Root Maggots
ESB	- Brown Stink Bug	GSB	- Grass Bugs	RPw	- Rednecked Peanutworm
BW	- Boll Weevil	HF	- Hessian Fly	RW	- Rice Weevil
BwWf	- Bandedwing Whitefly	HL	- House fly	SA	- Rice Water Weevil
CaB	- Carrot Beetle	HL	- Hog Louse	SAA	- Spotted Alfalfa Aphid
CaG	- Cattle Grub	HoF	- Horn Fly	SB	- Stalk Borer
CaL	- Cattle Lice	HS	- Horse Fly	SBRM	- Sugar Beet Root Maggot
CB	- Chinch Bug	IC	- Imported Cutbagworm	SCR	- Southern Corn Rootworm
CCG	- Common Cattle Grub	IMM	- Indian Meal Moth	SCSB	- Southern Cornstalk Borer
CdM	- Codling Moth	L	- Leafhoppers	Sc	- Scales
CEW	- Corn Earworm	LApw	- Lesser Appleworm	ScM	- Seedcorn Maggot
CFB	- Corn Flea Beetle	LCB	- Lesser Cornstalk Borer	Scw	- Screwworm
CF	- Cat Flea	Li	- Lice	SF	- Stable Fly
CFf	- Cherry Fruit Fly	LM	- Leek Moth	SfB	- Sunflower Beetle
Ch	- Chiggers	Lmf	- Leafminer Flies	Sfg	- Sunflower Maggot
ClB	- Cigarette Beetle	Lo	- Looper	SfM	- Sunflower Moth
CL	- Cabbage Looper	LPTB	- Lesser Peachtree Borer	Sfs	- Silverfish
CLa	- Corn Leaf Aphid	Lr	- Leafrollers	SGB	- Sawtoothed Grain Beetle
CLM	- Clover Leaf Weevil	LST	- Lone Star Tick	SGSB	- Southern Green Stink Bug
CLM	- Clothes Moth	M	- Mites	SHM	- Sunflower Head Moth
Cnt	- Centipedes	MB	- Maize Billbug	SJS	- San Jose Scale
Cor	- Cockroaches	MBB	- Mexican Bean Beetle	SK	- Sheep Ked
CPB	- Colorado Potato Beetle	NBSg	- Meadow Spittlebug	SL	- Soybean Looper
CR	- Corn Rootworms	MFM	- Mediterranean Flour Moth	Slb	- Spittlebugs
Cr	- Crickets	Mi	- Millipedes	SM	- Sorghum Midge
CrB	- Carpet Beetle	MM	- Meal Moth	SPB	- Southern Pine Beetle
CSPM	- Carmine Spider Mite	Mo	- Mosquitoes	SPS	- Southern Pine Sawyer
CS	- Camellia Scale				

LEGEND PEST ABBREVIATIONS

SpM	- Spider Mites	TFw	- Tomato Fruitworm	Wbw	- Webworm
SpW	- Sweetpotato Weevil	Ti	- Ticks	WC	- Walnut Caterpillar
SqGB	- Squarenecked Grain Beetle	TPB	- Tarnished Plant Bug	Wf	- Whiteflies
StB	- Stink Bugs	TPw	- Tomato Pinworm	WfB	- Whitefringed Beetles
SuM	- Sunflower Moth	Trm	- Termites	WG	- White Grubs
SW	- Sod Webworm	TS	- Twolined Spittlebug	WPS	- White Peach Scale
SWw	- Sorghum Webworm	TSc	- Tea Scale	WSM	- Wheat Stem Maggot
SWCB	- Southwestern Corn Borer	VbC	- Velvetbean Caterpillar	Ww	- Wireworms
T	- Thrips	VC	- Variegated Outworm	YA	- Yellow Aphids
TB	- Tobacco Budworm	W	- Weevils	YsAw	- Yellowstriped Armyworm

FOOTNOTES

- a/ Cost per application.
- b/ Losses in spite of treatments.
- c/ Based on 3 percent loss per borer per plant.
- d/ Includes quality loss
- e/ Based on acres produced instead of acres not treated.
- f/ Includes scouting costs.
- g/ Based on total pounds lost times price per pound.
- h/ Includes cotton seed loss.
- i/ Includes quality loss for alfalfa.
- */ Does not include Screwworm Eradication costs.

Pest Interceptions of Quarantine Significance at Ports of Entry

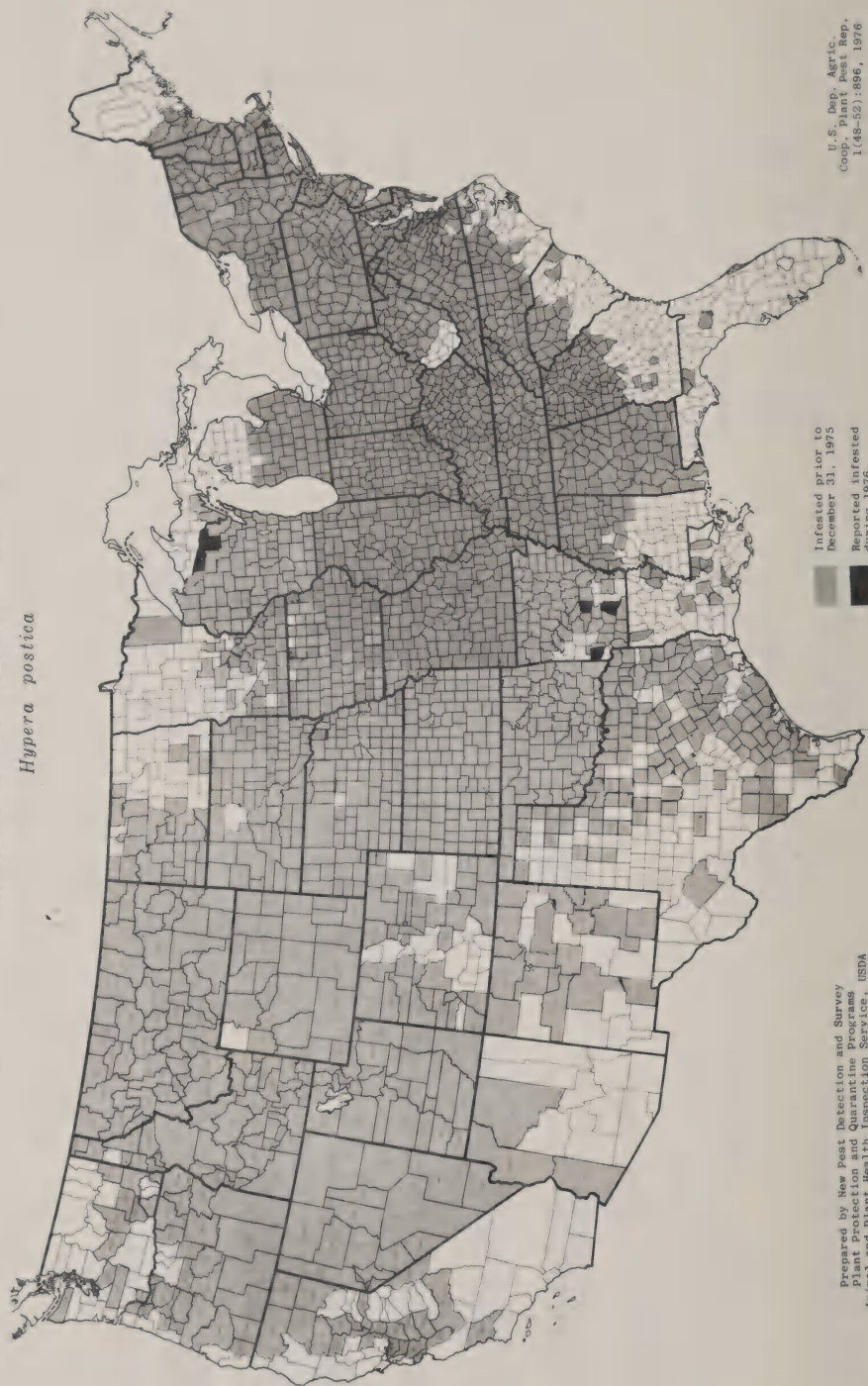
Plant Importation and Technical Support Staff
Plant Protection and Quarantine Programs, USDA

	<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Sphenospora kevorkianii</u> Linder a rust	uredial	on orchid plants	Miami	Ecuador	FL
<u>Septoria selenophomoides</u> Cash & Watson a fungi	imperfect	on orchid plants	Miami	India	IL
<u>Uredo sp.</u> a rust	uredial	on palm plants	Miami	Guatemala	FL
<u>Aleurocanthus woglumi</u> Ashby citrus blackfly	pupal	on citrus fruit from baggage	El Paso	Mexico	CA
<u>Anacridium aegyptium</u> (Linnaeus) an acridid grasshopper	adult	with military cargo	McGuire	Spain	USA
<u>Anastrepha ludens</u> Loew Mexican fruit fly	larval	in oranges from baggage	San Diego	Mexico	CA
<u>Ancognatha scarabaeoides</u> Burmeister a scarabid beetle	adult	with cut flowers	Miami	Colombia	USA
<u>Coccus viridis</u> (Green) green scale	adult	with gardenia plants from baggage	Hawaii	Hawaii	CA
<u>Cryptophlebia leucotreta</u> (Meyrick) an olethreutid moth	larval	in pomegranates from baggage	Dulles	Saudi Arabia	CA

<u>Life Stage</u>	<u>Host</u>	<u>Port of Entry</u>	<u>Probable Origin</u>	<u>Destination</u>
<u>Earias insulana</u> (Boisduval) a noctuid moth	larval	in okra from baggage	Kennedy Airport	Iraq OK
<u>Eurytoma</u> sp. a eurytomid seed chalcid	larval	in apricot seed from mail	Hoboken	Russia MT
<u>Liogenys macropelma</u> (Bates) a scarabid beetle	adult	with holds of commercial aircraft	Miami	Panama US
<u>Phloeosinus rudis</u> Blandford a scolytid beetle	adult	under bark of wood dunnage	Charleston	Japan USA
<u>Spodoptera litura</u> (Fabricius) a noctuid moth	adult	with holds of military aircraft	Hawaii	Philip- pines DE
<u>Spodoptera mauritia</u> (Boisduval) lawn armyworm	adult	with holds of military aircraft	Hawaii	Marshall Islands HI
<u>Sesamia nonagrioides</u> (Lefebvre) a noctuid moth	larval	in corn from baggage	Boston	Portugal MA
<u>Trogoderma granarium</u> Everts Khapra beetle	larval	with bales of cotton cloth	Charleston	Pakistan SC
<u>Achatina fulica</u> Bowdich giant African snail	adult	with baggage	Hilo	Hawaii CA

Distribution of Alfalfa Weevil

Hypera postica



Infested prior to
December 31, 1975
Reported infested
during 1976

Prepared by New Pest Detection and Survey
Plant Inspection and Quarantine Programs
Animal and Plant Health Inspection Service, USDA
December 10, 1976

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Coop. Plant Pest Rep.
1(48-52):896, 1976

2007
PESTS NOT KNOWN TO OCCUR IN THE UNITED STATES^{1/}

PACIFIC RICE CHINCH BUG ()

Dimorphopterus pilosus (Barber)
Hemiptera: Lygaeidae

CONTRIBUTED BY

Jon L. Herring 2/

ECONOMIC IMPORTANCE

This lygaeid, formerly not regarded as a pest of cultivated plants, has developed into a serious pest of subsistence production of upland rice in New Ireland Province, Papua New Guinea. 3/ As few as two bugs per plant on young plants and 15 on older ones are sufficient to cause serious damage. Entire fields are occasionally destroyed. Although rice cultivation has been almost abandoned in the Caroline and Marianna Islands because of several different rice pests, it is possible that D. pilosus could reach other upland rice growing areas such as the southern United States or Central America. This pest does not appear to pose a serious threat to paddy rice cultivation because it lives near the soil surface.

DISTRIBUTION

Described from the Yap Islands, West Caroline Islands; now known from New Ireland and Morobe Provinces, Papua New Guinea; Queensland, New South Wales, Northern Territory, and Western Australia, Australia.

HOSTS

Rice (Oryza sativa), corn (Zea mays), Eragrostis spartinoides, Paspalum spp., and other soft-stemmed grasses.

CHARACTERS

Dimorphopterus pilosus differs from Blissus species by being more robust and shining, femora more incrassate, anterior ones with preapical spines below, and apices of tibiae crowned with spinelike setae.

1/ This begins a new series which supersedes "Insects Not Known To Occur in the United States."

2/ Systematic Entomology Laboratory, IIBIII, ARS, USDA. Mail address: c/o U.S. National Museum, Washington, DC 20560.

3/ As told in his letter to me by P.R. Hale, Rural Development Officer at Kavieng.



General Distribution of *Dimorphopterus pilosus* (Barber)

ADULTS

Length 3.00-3.50 mm. Shining black; body, antenna, and legs sparsely covered with long tawny hairs. Antenna and legs brownish yellow. Scutellum dull, somewhat pruinose. Hemelytra tinted with brown, membrane sordid white. Head nearly one-third wider than long, coarsely, and closely punctate, eyes very nearly in contact with anterior pronotal margins. Antenna somewhat incrassate, subequal to combined length of head and pronotum, terminal segment long, fusiform, proportionate length of segments: 10, 17, 15 and 27. Rostrum extended to posterior coxae. Pronotum much wider than long, closely finely punctate, lateral margins parallel basally, then evenly, broadly rounded anteriorly. All femora incrassate, widest across middle, anterior femora with premedian spine or spines, anterior tibiae shorter than femora, somewhat spatulate, with spinelike apical setae. Scutellum much wider than long, dull pruinose, coarsely, and closely punctate. Hemelytra of both brachypterous and macropterous form. Terga and venter closely punctate.

CHARACTERISTIC DAMAGE

Adults and nymphs suck the sap from young rice seedlings causing severe dehydration and death within seven days. In older plants this injury causes the death of younger shoots. On corn this insect apparently does no damage.

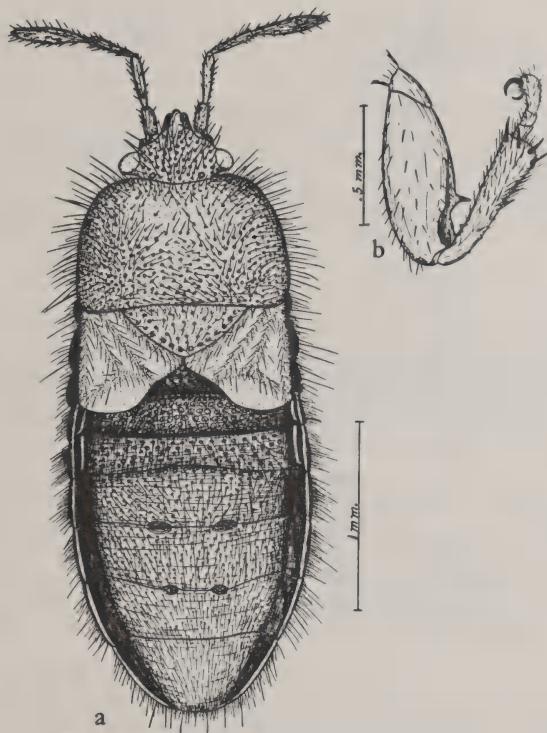
BIOLOGY

This pest lives at the base of rice plants in the upper 1-2 cm of soil and occasionally on the surface. At certain times it is collected on leaves. Nothing more is known of the life history

and habits. Slater (1974) speculated that this species might be parthenogenic, but material sent to me by Mr. Hale contained both sexes, 2 brachypterous and 2 macropterous males and 3 macropterous females.

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Dimorphopterus pilosus (Barber), adult ♀ and foreleg

Illustration from Barber, page 188

U.S. Dep. Agric.
Coop. Plant Pest Rep.
1(48-52):897-899, 1976

No. 1 of Series

Honey Bees (Apis spp.) Likely to be Intercepted at
Quarantine Stations,

S.W.T. \Batra 1/

Abstract

The species and subspecies of honey bees, including the Brazilian or African subspecies, are discussed and an illustrated key to the species of Apis is provided.

There are four generally recognized species of honey bees: Apis mellifera Linnaeus, the common hive honey bee; A. cerana Fabricius, the oriental hive honey bee; A. dorsata Fabricius, the giant wild honey bee; and A. florea Fabricius, the dwarf wild honey bee.

The family Apidae includes honey bees, bumble bees, tropical stingless bees, and several species of tropical solitary and parasitic bees that are rarely encountered.

Worker bees in the Apidae are distinguished from other families of bees by the presence of corbiculae. These are flattened, smooth, shiny areas surrounded by a fringe of hairs and located on the exterior surfaces of the hind tibiae and basitarsi (Fig. 3c). Queens, males (drones), and parasitic species of Apidae lack the corbiculae used for carrying pollen. Apis drones have large eyes that meet on top of their heads. Females of other families of bees possess a hairy scopa (Fig. 5s) instead of a corbicula.

Apis spp. may be separated from other genera in Apidae by the absence of spurs on the tibiae of the hind legs, hairy eyes, and a long, narrow marginal cell which extends almost to the tip of the forewing (Fig. 4m). Other Apidae differ in the structure or length of the marginal cell.

Apis mellifera (Fig. 1), the common domesticated honey bee, came originally from Europe, western Asia, and Africa but has been introduced throughout the world by beekeepers. It has many well-known, morphologically different subspecies such as the relatively gentle Italian and Caucasian, and the more aggressive German and African subspecies. The common honey bee has long been kept in hives, but often swarms will occupy hollow trees or holes in buildings.

In 1957, 26 swarms of the aggressive African subspecies (A. mellifera adansonii Latreille) escaped from an experimental apiary in southern Brazil. They interbred with the European subspecies in the area. The resulting irritable, aggressive hybrids, known as Brazilian or "Africanized" bees, multiplied, swarmed, and migrated rapidly in the warm climate. Brazilian bees now occupy hives or wild sites in parts of Brazil, Peru, Bolivia, Uruguay, Argentina, French Guiana, Surinam, Venezuela, and all of Paraguay. Their effect in the southern part of South America has been lessened due to much interbreeding with gentle European subspecies and improved apiary management.

1/ Beneficial Insect Introduction Laboratory, IIBIII, ARS, USDA,
Bldg. 417, Beltsville, Maryland 20705.

Distinguishing individual specimens of the Brazilian bee from those of other subspecies of A. mellifera is difficult. But Dr. H.V. Daly of the University of California has been able to separate them using multivariate analysis of many measurements of each bee specimen. Generally, the Brazilian bee is slightly smaller than other subspecies and it often has yellowish abdominal bands.

Apis cerana (= A. indica Fabricius), the oriental domesticated honey bee, has been kept by Indian and Chinese beekeepers for centuries. It closely resembles the common honey bee but is somewhat smaller. Hives and foundations designed for this bee are scaled down to suit its smaller size. It is gentle and a fairly good honey producer, but it is not used in the Western Hemisphere and does not occur there. According to some specialists it is another subspecies of A. mellifera. It is found in India, Sri Lanka, Southeast Asia, Indonesia, the Philippine Islands, China, Taiwan, and Japan.

Apis dorsata (Fig. 3), the giant wild honey bee, builds its large single-comb nests exposed on high branches, buildings, or cliffs in Pakistan, India, Southeast Asia, Indonesia, Philippines, and southern China. It is very aggressive and has never been domesticated. Nests are frequently destroyed by people gathering the prized honey and wax. Unsuccessful attempts have been made to bring this species into the United States. It has an elongated yellowish to black abdomen with transverse bands of short pale hairs, long dusky wings, and a thorax covered with dense black and tan hairs.

Apis florea (Fig. 2), the dwarf wild honey bee, builds exposed single combs in trees or bushes in Oman, Iran, Pakistan, India, Southeast Asia, and Indonesia. People rob its nests for their small yield of honey. The color of the abdomen of this house fly-sized bee varies from all black to bright chestnut brown. Two transverse abdominal bands of short pale hairs are usually present. The relatively sparse, short thoracic hair is grayish.

Key to Apis Workers

1. Forewings large (12.5-14.5 mm long), brownish; abdomen elongated (8.0-10.0 x 4.0-4.5 mm).....Apis dorsata
- 1'. Forewings smaller (6.5-10.0 mm long), transparent....2
2. Forewings very small (6.5-7.0 mm long); abdomen relatively small (4 mm long x 3 mm wide).....Apis florea
- 2'. Forewings of intermediate size (7.0-10.0 mm long); abdomen 5-6 x 4 mm.....3
3. Second abscissa of vein M_{3+4} well developed (circled in Fig. 4).....Apis cerana
- 3'. Second abscissa of vein M_{3+4} absent or merely a short spur.....Apis mellifera

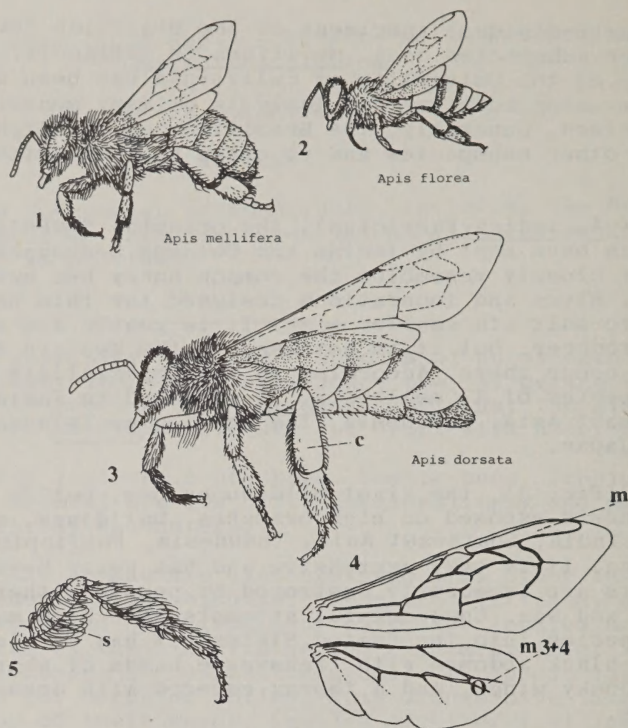


Fig. 1-3. *Apis* workers, drawn to same scale. 1, *A. mellifera*; 2, *A. florea*; 3, *A. dorsata*, c - shiny corbicula. Fig. 4, wings of *Apis* sp. showing elongated marginal cell (m) of forewing and location of second abscissa of vein M3+4 of hind wing (circled). Fig. 5, hind leg of *Andrena prunorum* Cockerell showing the hairy scopa (s) characteristic of most female bees not belonging to Apidae.

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